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SELECTED SOVIET MILITARY TRANSLATIONS

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"ENEMY" SHIPS DETECTED

SELECTION OF TACTICS IS THE RIGHT OF THE CREW OF THE RECONNAISSANCE PLANE

Sovetskiy Flot
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Russian, nsp

Capt. A. Oreshchenkov
Military Navigator 2nd Class

Captain Konovalenko's crew received an assignment to carry out a reconnaissance of the "enemy" naval base. Preparing for the flight, the pilot, navigator, and gunner-radio operator, in strict sequence studied the route they were to take and familiarized themselves with ground recognition features. Navigator Sr. Lt. Tarkovskiy scrupulously made all his calculations, noted on the map his fuel expenditure control points.

It would seem that everything had been thought out to the tiniest detail. But Maj. Ageyev, in control of the crew's preparations, remained unsatisfied.

"Is this what you are going to do during the flight?" he asked, pointing to the straight line of the route they were to take.

"Yes, comrade Major," Konovalenko replied, without trying to determine why he was dissatisfied with it.

The major fixed the pilot and navigator with an attentive glance.

"If that is so, then listen to what I have to tell you.

"In my own time, I, together with my navigator, just as you are doing now, drew out our route in an absolutely straight line: take-off, gain altitude, straight flight. The flight results were pitiful. The 'enemy' fighter planes intercepted us back on the approach to the target and gave us a 'working over' that I remember still. That flight taught us a good lesson. 'We are not going to fly in that manner any more,' we decided, and began seeking new and improved tactics. In preparing for the next regular flight, we took almost everything into consideration: weather, the site where the 'enemy' fighter planes were based, and the location of anti-air defense positions. Only after a very careful analysis of the situation did we fix a route and select the maneuver which would accord us the greatest degree of cover and surprise in arriving over the 'enemy' target."

After a slight pause, the major continued.

"This is my advice: sit down and think out the best possible route for your coming flight, and report it to me."

Without wasting time, the pilot and navigator sat down to their figuring. Time passed. Finally, Konovalenko said:

"It seems, navigator, that I have found a better solution for the task given us. Determine the limits of observation of our plane by the 'enemy' radar stations at various heights. I think that we ought follow such a route..."

An Konovalenko began to expound his ideas.

"The plan is an appropriate one," the navigator said, in support of his commander. "I'll start working out my calculations now."

Columns of figures arose on the blank sheet of paper, while more and more new entries were made on the map. When their work was completed, the route for the forthcoming flight looked entirely different.

"Now another thing," Maj. Ageyev said in support. "I have a feeling that you have done some creative work here. But keep one more thing in mind: stay as far away from the shore as you can and do a lot of maneuvering."

While the crew discussed and worked out the details of the coming training assignment, aircraft mechanics Bezborod'ko and Kitsenko, under the direction of crew chief Yermolayev, carefully checked the equipment. They well understood that the success of the training in the air depended to a great degree upon their application and conscientious work.

The time for the flight arrived. Having gained altitude, the jet shot forth into the cloudy autumn sky. After several minutes of flight, it grew dark in the cabin of the plane. Through the darkness of the thick clouds the lights on the plane's control panels could barely be seen. The bright clear line of the shore flashed onto the radar screen. Ahead -- open sea. The plane tore ahead bravely into the strong rising and descending air. The minutes of blind flight seemed intolerably long. Finally, the clouds began to thin out.

"We have reached the fringe of radar detection," the navigator reported.

Konovalenko carried out the maneuvers which had been worked out back on the ground. A certain period of time passed. Again the voice of the navigator was heard. And again a maneuver.

In the darkness of the cabin, the outlines of a bay and the object of reconnaissance began to appear on the radar screen. From the plane, one after the other, went reports on the location of "enemy" ships. The crew made use of almost every second, sought to cut to the minimum the time the reconnaissance plane had to spend over the target, and, at the same time, avoid encountering fighter planes.

The reconnaissance was over. In a sharp turn at high speed, the pilot flipped the ship over into the direction of the sea.

And it was only after the plane was considerably distant from the base that the fighter planes ceased to pursue it. However, Capt. Konovalenko outfoxed the "enemy." Entering a cloud, he changed course by 90 degrees and then, maneuvering skillfully in the lower layers of the clouds, broke off from pursuit.

The crew of the reconnaissance plan had successfully coped with the task placed before them. The photographs it had taken confirmed the truth of the data transmitted by the navigator on the location of "enemy" forces.

Analyzing this flight, one again is convinced of the tremendous importance of the personal initiative displayed by the crew in carrying out air reconnaissance. There must be selected for every flight the most suitable tactical maneuver, based on the specific conditions which have developed. Unfortunately, in our practice, crews of reconnaissance planes do not always succeed in doing this. Crews now are limited in their choice of tactics. They are usually given a strictly defined route and altitude in advance. This, of course, shackles the initiative of the crew in the selection of tactics. Against one's will, one is forced into a pattern. It is not accidental, therefore, that even air "combat" with fighter planes is at times conducted under over-simplified conditions. It seems to me that it might not be bad, albeit it periodically, to conduct flights in which the crew of the reconnaissance plane are given the right to select their tactics in execution of a training assignment. The interests of improving tactical mastery by air reconnaissance crews urgently demand it.

Ch, yes.

PRACTICAL AND COMPLEX

SHIP CONDITIONS CREATED DURING TRAINING

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Russian, nsp

Capt. 3rd Rank V. Kamanin,
Candidate of Naval Sciences

As is known, perfecting the practical training of students now basically proceeds along the line of bringing the training situation close to those under which the future officers will have to work aboard ship. This finds expression also in improving the equipment in classrooms, which are being equipped more and more with mechanisms and devices now in use, and in improving the methodology for conducting such training. For one and the other are indissolubly tied in with each other.

In order to aid students to acquire the work habits necessary to the submarine navigator, a new study room of navigational plotting was set up at our Submarine Navigation School imeni Leninskiy Komsomol. Equipped with the very latest navigation devices, various simulators, functioning diagrams, and a panorama which includes the features of shorelines together with lighthouses and beacons, this study room permits giving students so-called complex practical training.

Formerly, the aim of practical training was to strengthen the theory presented in lecture material; this was done individually for each subject. As a result, students often were not presented with the total concept of ship navigation. And when the graduate of the school set about independent work, it was difficult for him to tie into one all of the knowledge and habits acquired in his courses on navigation, nautical astronomy, and technical navigation equipment. This had a negative effect upon the practical activity of the young navigator.

Consequently, experience directed us to the idea of finding a form for the practical training of students which would teach them to look upon all subjects as an inseparable whole, and which would get them into the habit of resolving not isolated, but complex navigational tasks. Finally, after long search, there was worked out a methodology for the organization and conducting of complex training in ship navigation.

How do we conduct such training? We should first of all note that not just one, but a series of combined chairs participate in the organization of such training. These chairs, prior to the beginning of the school year, agree among themselves on the training topics and

designate the periods during which they will be taught. A group of instructors then prepares a working plan for each complex training exercise in turn, which is reviewed and approved at a joint session of interested chairs. Following this, the individual elements of training are then worked out with the students: graphic dead reckoning with consideration of drift and currents, determining location by the stars, preparation of navigation instruments for a cruise and their regulation, etc. Then, the instructor conducting the training acquaints students during their study hours with the topic and contents of their complex training, organizes the navigational plotting together with them in the study room and at their stations. There, in the study room, the students prepare their places, and check on the correctness of their navigational instruments before the beginning of training.

Finally, the training itself begins. The director of the training is at the control board and, in conformance with the plan for the "cruise" sets up the proper data on the instruments and issues the corresponding commands. On their own, students determine drift or current, calculate the sunrise (sunset) time, and "raise" periscope in order to take a bearing and to correct their compass reading. Upon discovery of ships of the "enemy," students carryout their combat plotting. With the aid of a tape recorder, the sound of propellers and the explosion of depth bombs dropped by pursuing anti-submarine vessels is simulated during the attack.

The instructors of the combined faculties participating in the training consult the students on their subjects and give them various conclusions. The training ends with a serious and thorough critique.

Particularly interesting and pithy was the complex training exercise on the topic of "Preparation of Submarines for Long Cruises," which we conducted at the end of the previous school year with students of the graduating class. In all of its aspects, it took 20 hours. In addition, part of the preparatory work -- the selection of maps and aids and their correction, the drawing up of preliminary plottings of courses, etc. -- was done by the students during their own study hours.

The conditions existing during the training were as close as possible to those aboard ship. For six hours in a row the students carried out their complex plotting. Thanks to the fact that ship's time was stepped up by special simulators, the "submarine" managed to get back from its cruise in that time. In the regular class training which followed, the students drew up a report on the cruise.

This important training, was concluded with a careful and serious critique, summed up the results of the entire school training of the future navigator. The students received a total concept of the entire range of the knowledge and habits in ship navigation which will be

required of them in the first steps of their practical activity. This past summer these students participated in a cruise aboard the cruiser "Frunze." All of them were given extensive opportunity to orient themselves as to the situation involved.

It has been decided to practice this practical training on an even wider scale in this present school year. Such training has fully justified itself. The Chair of Navigation is now completing the compilation of a "Methodology for Preparing and Conducting Complex Practical Training." However, quite a few difficulties remain to be overcome both in the planning of this training as well as in the working out of individual topics. It would be extremely useful, therefore, to exchange the experience available in this field, both in our and in certain other schools.

IN OUR OFFICER FAMILY

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Russian, nsp

Capt. 1st Rank S. Zuyenko

Two officers in one of the torpedo boat squadrons got into a quarrel. It seems it all began over a silly trifle, but, as it sometimes happens, one word led to another until there were insults. The officers no longer visited each other in their cabins as formerly and greeted each other with emphatic coldness, as if they were strangers, in the company room. When their colleagues tried to explain to both of them that it was not fitting for mature men to behave in this way, one of the officers replied: "And precisely why does it bother you? Don't interfere in our private business..."

Was this officer correct? Can we agree that the relations between the two colleagues was their own affair and should not have upset their comrades?

I think that there can be no divergence of opinion here. In a good family, of course, no one will remain indifferent if two of its members sometimes quarrel. And it is not for the sake of eloquence that we contend that a ship is an officer's home, while the circle of his colleagues is his family -- a family in which people do not simply live together, sharing all joys and sorrows but, if it becomes necessary, will go together into battle where victory or death will be their common lot.

Now, when the whole Soviet people under the leadership of the Communist Party is storming the heights of the Seven-Year Plan in a united front and is building the bright edifice of a communist society, such remarkable characteristics of our people, who have been educated by the Soviet system, as collectivism and mutual help are particularly evident. High, noble aims, in the name of which Soviet sailors perform their honorable watch, cement and unify all our military collectives. It is precisely close friendship, with all for one and one for all, that helps the personnel of ships and units achieve success in study and service. That is why one must struggle with resolution and in unison against everything that could weaken the strength and firmness of our friendly collective.

It is obvious that none of us can stand aside when it is a question of the relations among members of our ship's officer family. No one can be indifferent to petty disagreements among colleagues nor to manifestations of arrogance, crudeness or concent toward comrades or subordinates.

We cannot . . . but, in reality, the strange thing is that frequently enough some of us still abandon party principles, take up positions as sideline observers when we see some abnormality in relations between colleagues, in their behavior. I should like to speak frankly about this.

Preparing for its turn at firing, the squadron torpedo boat moved out to sea on a trial run. In the base the commander had beforehand "played out" on the map all possible variations of the impending "battle." It seemed that everything was explained and understood. However, at the very moment when the agreed-upon open-fire signal should have been given, it was clear that the navigator, Capt.-Lt. Pinskiy, had guided the ship out inaccurately to the assigned distance.

Naturally, this development became the subject of conversation in the company room.

"Well, navigator, if this is repeated during the actual firing, we'll surely get a poor grade," one of the officers justly remarked.

"Rather than minding someone else's business, it would be better to attend to your own," replied the navigator, not very politely. "Can you really say you've never made a mistake?"

"Well, of course I have. But now we're talking about yours. And, in my opinion, your mistake came about through . . ."

With the best intentions the officer tried to explain to the comrade the reason for his miscalculation. But Capt.-Lt. Pinskiy wouldn't hear him out. And what about the other officers who were in the company room and witnessed this conversation? They could, of course, by supporting their comrade in a friendly way, have convinced the Capt-Lt. that he should not be offended by truthful words and should certainly not reject proferred help. However, they preferred to remain silent.

In the following days the navigator pretended not to notice the one who had "offended" him, while the latter no longer risked expressing his thoughts on the reasons for the error. It was evident that there was bad blood between the two officers. Jokes about this even made the rounds in the company room, and for some reason no one wished to take a more serious attitude toward what had happened.

And, as should have been expected, all this had rather unfortunate consequences. When it came to firing for the record, the navigator repeated his previous error, and the intensive work put in by the entire crew over many days was not crowned with success. When the firing was analyzed, it became clear that the officer whom the navigator refused to

heed had actually understood the reasons for the error very well. In short, all could have turned out differently if a principled conversation had taken place in the company room, if all the officers had shown interest in the comrades who had offended each other, if they had tried to find a common language for them.

Attention to comrades; concern for them! Frequently we limit this concept only to concern for their material-practical well-being, which is, of course, necessary too. But we lose sight of what is no less important -- the mental attitude, if it can be put that way, of a person. From time to time you will hear, of course, a tactless word spoken in our company rooms, or else a barbed joke directed by one of the officers against his colleague. Sometimes this is called "horseplay" of a kind supposedly traditional in the Navy, and, therefore, no one is supposed to take offense.

But can we seriously say that tactlessness and offensive jokes about colleagues are a naval tradition? Well, let those who continue to talk this way just reflect that many "traditions" of the past have no right to exist in our times. For example, in the old days the navy was tolerant of drunkenness. But today, an all-out irreconcilable struggle for its eradication is being waged. We have to struggle also against irregularities in the relations among colleagues and be more attentive, more vigilant toward people.

In this regard, many so-called "trifles" are of more than a little importance. Take as an example the way officers address each other. On most ships officers, regardless of their rank, address each other by first name and patronymic during their off-duty hours. And life has shown that this is by no means a trivial matter. Addressing someone by name and patronymic emphasizes respect for a person, helps to create a cordial, friendly atmosphere in the company room and in the officers' dormitory.

It is obvious that a cordial, friendly tone has nothing in common with exagerrated "politeness" or casual familiarity. On one of the ships, for example, the officers address each other by name and patronymic everywhere -- in the company room and on the bridge. And, occasionally, instead of a firm and clear command, an officer here says to his inferior, as though he were apologizing:

"Now, how is it, Boris Victorovich, that you still haven't done . . I have, of course, reminded you many times. . ."

Such "gallantry" on duty is not only useless, but, like rust, it also corrodes the prescribed military discipline.

A considerate, comradely attitude toward colleagues does not at all imply declaring a mutual amnesty on shortcomings and errors which cause some damage or other to our service, to our common cause. It is a truism that only a real friend, sincerely desirous of keeping you from further error, will tell you the truth, no matter how painful, right to your face. And we all must learn to speak boldly and to listen to the truth without taking offense.

Capt.-Lt. G. was appointed to a new ship for further service. Judging by his documents and the recommendations of his former colleagues, this officer was considered a good specialist, a skillful instructor of subordinates, a good comrade. And that's the way he proved to be in the first period of his assignment to the new ship, too. But time passed and more and more undesirable qualities began manifesting themselves in the officer's conduct. His former tact and self-control with subordinates and colleagues were replaced by rudeness and irritability. This couldn't help affecting the position of the Captain-lieutenant in the officers' collective, and it harmed the work of his unit.

The older chiefs and the party organization tried to determine what had happened, why the officer changed in this way. Not right away, but finally it was found that the reason lay not so much in the officer himself as in the incorrect work methods of the commanding officer of the ship with his subordinates. Instead of teaching the officer, who had committed a number of errors, as was natural on a new ship, the commanding officer simply began relieving him of duty assignments and "chewed him out" as well. This threw the officer off his normal course. Coming to the conclusion that that's the way things were done there and that it was certainly not his business to violate the established "rules," he, following the example set by his chief, also adopted an improper tone in relations with his subordinates and colleagues.

By the way, when his incorrect work methods with the captain-lieutenant were pointed out to the commanding officer, the latter responded with a long tirade. The burden of it was that since a commander has full responsibility for his ship, the way in which he commands is his own business. The main thing was that the crew meet the standards of military preparedness.

For a commander to think of a ship which has been entrusted to him as an ancestral estate of some kind is the rarest of phenomena in our navy, especially now, two years after the October plenum of the CPSU Central Committee. And it's a very good thing that the commander we have been talking about realized he had made an error and corrected it. However, if we have eliminated the blatant examples of this kind of military "leadership," the same thing cannot yet be said about some individual cases which are in essence a "regurgitation" of old incorrect

views on the nature of relations between chiefs and subordinates. Occasionally you will meet a commander who will sometimes lose his party qualities and substitute rudeness for strictness, sincerely believing that the character of relations with subordinates is the "private affair" of the commander himself.

One of the reasons for certain relapses to incorrect relations among colleagues and between a chief and his subordinates is, in our opinion, that officers' groups and party and Komsomol organizations do not give these questions the attention they deserve.

Among many good naval traditions is the tradition of firm fellowship, a feeling of comradeship. Ask anyone who participated in the Great Patriotic War and he will recall more than one occasion on which this feeling helped him overcome every difficulty and go forth boldly to face danger. But, of course, we need firm unity and mutual consideration now, too, in our normal lives. The awareness that we are all members of a single cordial military family determines the nature of our on-duty and off-duty relations. And there can be nothing more erroneous, more harmful, than the notion that it is the "personal" business of each of us to decide with whom to be friends and with whom not.

However, is it often that we discuss questions concerning the character of relations among officers? Let's not be hypocritical -- very rarely. If some officer or other conducts himself improperly or commits errors in the course of his duty, this usually becomes the subject of discussion in the collective only when the matter goes to undesirable extremes. But, of course, it is more useful to prevent errors, and in order to do this, in the company room and at a party meeting we must speak openly and seriously, in one big cooperative effort, with the comrade who is getting on the wrong path.

However, we often avoid such a principled discussion because we falsely fear undermining the "authority" of the comrade. However, it is perfectly obvious that the officer's reputation will be even more damaged if he is not prevented in time from repeating his error.

Not only should our party organizations not forget this, but our Komsomol organizations should not, either. Now, of course, when it comes to a discussion of questions concerning relations among Komsomol members, we usually refer only to sailors and petty officers. Officers who are Komsomol members either simply attend these discussions or take part as "referees." But the officers are also young people, of course, who are only just entering into independent life. And it is also very useful to discuss these questions with them.

It is sad but true that the officers' community loses sight of many questions on which depend the unity of the officers' collective and the establishment of correct relations between chiefs and subordinates. If it does happen that a conversation is broached in the collective about the errors of some comrade or other, certain officers demur: "But how can you criticize a friend with whom we have served so many years?"

It is these officers who should be reminded of the words of Comrade N. S. Khrushchev. "Only on the basis of firm principles," he said at the June plenum of the CPSU Central Committee, "can a principled friendship among people exist . . . " It is precisely this kind of principled friendship that should unite the family of officers on every ship, in every unit.

CONCERNING SHORE LIBERTY

Unsigned Article

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How many times a week is a seaman or petty officer enlisted for the duration of service entitled to shore liberty? Can the same seaman be given liberty two days in a row, on Saturday and Sunday, if he was on duty for a week? -- Petty Officer 2nd Class V. Klyuev

Seamen and petty officers enlisted for the duration of service are given liberty in order of rotation. Based on the percentile norms for granting personnel shore liberty as set by the navy, every seaman is entitled to one day of liberty a week. As has already been indicated in this newspaper, it would not do to have individual servicemen granted shore liberty often at the expense of refusing their comrades such liberty.

Of course, the right to relieve a seaman two days in a row is left to his commander. But this should not be done by depriving any of the seaman's colleagues of their regular leave. Military personnel granted shore liberty by way of reward are not included in the over-all percentage of those granted liberty.

Can a seamen who for reasons beyond his control could not utilize his right to go on shore for two to three weeks be given more shore liberty during the following week? -- Warrant Officer A. Belokopytov

No subsequent "compensation" is due seamen who for some reason or other forego their regular turn at shore liberty. However, if the commander thinks that one or another seaman needs additional rest, he can grant him liberty more than one time a week.

If a subsection has two petty officers enlisted for the duration of service and they want to spend their shore liberty together, can they be granted liberty simultaneously? -- Petty Officers 1st Class Uzhva, Dolmatkin, and others

Ships' regulations call for the replacement of petty officer personnel during their shore liberty. Therefore, if there are only two petty officers in the subsection, then they go on shore liberty in turn. The commander, however, can in certain instances grant them leave at the same time, if the subsection has seamen who are sufficiently trained and capable of replacing the petty officers temporarily.

Can a seamen relieved of duty because of illness but not needing to be confined to bed be granted leave to go into the city? -- Seamen I. Matlakhov, N. Balaban, and I. Kozlov

Here everything is left to the discretion of the commander. If, after taking to mind the conclusion of the doctor, the commander thinks that a visit on shore will not act to the detriment of the seaman's health, he can grant him liberty.

On Sundays in our unit, shore leave until 2300 hours is permitted. Meanwhile, concerts and other entertainments to which the seaman might go are usually over shomewhat later than that. Should not liberty until 2400 hours be granted in such instances? -- Seaman A. Tseulev

Unit commanders have the right to grant liberty until 2400 hours for seamen and petty officers who have tickets to concerts or plays.

How much time should be set aside for personnel preparation for shore liberty? -- Seaman B. Grigor'yev

There is no provision in regulations for special time set aside for seamen preparing to go on shore liberty. Personnel should prepare for liberty in their free time after training and work.

What is the difference between procedure for granting shore liberty to personnel of shore-based units and liberty procedure for seamen of sea-going vessels? -- A. Chumakov

The main difference lies in the fact that in shore-based units liberty is granted twice a week, while on ships it is granted four times a week. The personnel of shore-based units are granted liberty on the days and at the hours established by the commanders of large units (soyedineniya).

How should the punishment "deprivation of three consecutive shore liberties" be interpreted? What length of time does it cover? -- Seaman B. Lerner

A serviceman receiving such a punishment, is not granted liberty three times running on those days when it is his turn, in consecutive order, to go on shore. If the ship is at sea, or other reasons arise which make granting liberty impossible, then seamen and petty officers deprived of liberty by way of punishment work out their penality upon restoration of shore liberty privileges to personnel. However, deprivation of liberty, like any other punishment, should be completed by not later than a month after the punishment was imposed. According to paragraph 69 of Article 9 of the Disciplinary Regulations, punishment is not carried out after one month has elapsed but is entered in the book of punishments and awards.

FINE FELLOWS, SUBMARINERS!

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Page 4,
Russian, nsp

V. Savranskiy

It happened on one of the cruises. After a long stay in the depths, the submarine surfaced at night. A storm raged on the sea. And at that moment the unexpected happened -- the fuel exhause outlet jammed in the neutral position.

Surveying the boiling surface of the sea in a glance, the ship's commander realized that it would be very difficult to correct the defect. The waves were breaking across the ship. Serious danger threatened anyone who dared leave the protection of the conning tower and crawl to the stern, where the exhaust outlet was located.

In his mind the commander sorted out all of the specialists in the ship's engineroom section. Who to send out there? Any seaman, without thinking, would carry out his order. But he ought to send someone out there who could best cope with the task.

As the captain third rank had expected, everyone volunteered to perform the dangerous task. He selected Petty Officer 1st Class Kiselev.

"I above all am entitled to it," he said. "I was on watch when we surfaced."

A rope tied about his middle, the seaman carefully left the protection of the conning tower and ventured out onto the slippery deck.

"Give us a signal every minute by striking the hull with your sledge hammer," his officer warned him.

The petty officer had not managed to travel one meter of his route before a wave engulfed him. But the seaman kept his footing. Crawling on all fours, he moved forward, lit up by the light from the bridge. But it was raining and the fog was so thick that even the searchlight could not penetrate it. Kiselev could not be seen.

Several anguished moments passed. Finally, out of the darkness came the sound of muffled blows. Kisilev was signalling that he had reached the stern. Having penetrated into the superstructure, the courageous submariner set about loosening the bolts of the hatch under which the fuel exhaust outlet was located. The waves often covered the seamen from head to foot.

The seaman worked for about an hour. In that time he succeeded with great difficulty in undoing only six bolts. To continue the work further was impossible for the petty officer -- his strength had left him. He was forced to return to the bridge.

"It is impossible for one man to work alone, comrade commander," Kiselev reported. "Permit me to go out there once more with someone."

However, the officer ordered Kiselev to go below and rest. All the rest of the seamen learned immediately about the feat of the petty officer. Every one of them wanted to follow the example of their comrade. And up on deck went Warrant Officer Borzenkov and Chief Petty Officer Podol'skiy, both strong, agile, who knew their business well.

At that moment the storm became worse. Through the raging water not even the deck could be seen. But this did not deter the submariners. Risking being swept overboard, they succeeded in reaching the stern. They got into the full swing of the work. Finally, one after another, there were heard three blows of the sledgehammer against the hull.

"They did it! Good fellows!"

After a little while the ship got under way. The seamen successfully fulfilled their training task on that cruise.

Yes, on that stormy autumn night party member Ivan Borzenkov and Komsomol members Leonid Podol'skiy and Yuriy Kiselev performed their worthy feat. Courageous, brave, they demonstrated high moral and combat qualities and fidelity to their military duty.

POST ON THE SEASHORE

Sovetskiy Flot
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6 October 1959, Moscow,
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Russian, nsp

Unsigned Article

Pacific Fleet, 5 October. (From our Sovetskiy Flot Correspondent). On the rocky shore of the ocean is located our observation and communications post. The small shack is filled with complex equipment. Here a small collective of sailors, headed by Sr. Engr.-Lt. Reunkov, carry out their difficult watch.

There at the screen of the radar set we see Petty Officer 1st Class Abrashin. His attention is concentrated upon the screen. From time to time he changes the scanning sector. The screen is bare. But the petty officer has already discerned a barely perceptible dot during a sweep of the screen. It is becoming clearer and clearer. His report on the discovery of a target has already been made. The experienced radar operator has not let it out of his sight for even a minute.

Officer Reunkov, having joined him at the radar screen, then ordered specialist 1st class, Petty Officer 1st Class Novichkov to contact the ship. It turned out that a fishing boat was returning to its base.

A signalman is vigilantly watching the sea and the horizon. Young seaman Voytenko is carefully looking out into the distance. He has not served long at the post, but his diligence and his application have already won him the respect of his comrades.

Having assured himself of the efficiency of the watch, Sr. Engr. -Lt. Reunkov has gone off into the crews' quarters. Here everything is clean and in order. He has become engaged in a free and easy talk with the seamen who are off duty. Party member Reunkov tells them in detail of the latest news.

Officer Reunkov has served at this post since February of this year. Over this comparatively short period of time he has made significant advances in the training and education of his subordinates. There are no violations of discipline among the seamen and petty officers, who skilfully carry out their duties. The officer patiently transmits to the petty officers his skill at working with people. Section commanders spare neither time or energy in training their seamen.

The engine operators, headed by Petty Officer 2nd Class Pogodin, have achieved good results in the operation of their equipment. They have doubled the period of operation of their equipment in between repairs. For over a month all engines have operated on fuel which has been saved this year. There was not a single instance of anything going out of order because of a broken part.

Nor do the other seamen-specialists lag behind the engine operators.

The post's Komsomol organization, headed by Petty Officer 2nd Class Pogodin, is working with initiative. Here, evenings devoted to the discussion of various topics and new books go off with great interest. All the seamen have passed their summer requirements for the GTO (Prepared for Labor and Defense) Badge.

The seamen and petty officers are vigilantly carrying out their watch on the shore of the sea. For their high indices in training and service, their senior commander has awarded the post a certificate.

RADIATION RECONNAISSANCE

Atomnaya Energiya i Flot
/Atomic Energy and the Navy/,
Military Publishing House, 1959, Moscow,
Pages 110-120
Russian,

Engr.-Capt. 2nd Rank I. Frolov

In atomic explosions on the sea (aerial, surface, or underwater), the area of the explosion and the ships and shore installations within its boundaries might prove to be contaminated with radioactive substances to a greater or lesser degree. The radioactive contamination of ships and shore installations might also occur in those cases where the enemy uses combat radioactive substances specifically designed for this purpose.

As is known, radioactive substances can do no harm to military equipment. However, being in a contaminated area and having to handle contaminated armament, property, and various objects presents a danger to personnel, because radioactive radiation is harmful to the human organism. The timely discovery of radioactive substances and application of the necessary precautionary measures will help protect personnel from being contaminated, and will facilitate the possibility of carrying out active combat operations and of successfully fulfilling combat tasks under conditions in which atomic weapons are used.

One of the characteristic peculiarities of radioactive substances is that they cannot, by their outward signs and chemical characteristics, be distinguished from ordinary substances either by ordinary sense organs or by chemical means. The presence of radioactive substances can be determined by the existance of radioactive radiation, as registered by dosimeters or radiation counters, with the aid of which radiation reconnaissance is also carried out.

This is a new type of reconnaissance, the need for which was brought about by the appearance of atomic weapons. Radiation reconnaissance is carried out immediately after the explosion of an atomic bomb or the use of combat radioactive substances by the enemy. It is conducted without fail no matter what the conditions of the situation are.

The basic task of such a reconnaissance is the timely discovery of radioactive contamination and the warning of personnel, determination of the degree of radiation in the contaminated area, establishing and marking the bounds of this area and its more dangerous sections, as well as determining the degree of contamination of ships, technical means, the

air, water, soil, foodstuffs, etc. In addition, there is placed upon units (podrazdeleniya) conducting radiation reconnaissance the task of individually checking personnel for radiation.

At the present time there are several methods for determining the intensity of radioactive radiation. The best known of these is the so-called ionization method, based on the measurement of the ionization effect created by radio activeradiation as it goes through the atmosphere.

Picture an electrical circuit with an air capacitor connected to it. If you close such a circuit, the current does not flow through it because the air between the plates of the capacitor is a good insulator. If you were to place this close to the source of radioactive radiation, an ionization of the air, i.e., a splitting of the units of its molecule into unlike charged particles (ions), between the capacitor plates would result. The ions thus formed would, under the influence of the capacitor's electrical field, begin to move towards its plates, with the positive ions going towards the negatively charged plate, and the negative ions to the positively charged one. Thus, between the plates of the capacitor, there would flow a so-called ionized current, which can be measured by the inclusion of a sensitive instrument within the circuit.

The current within such a circuit, however, is low as a rule; therefore, a special amplifying device is necessary for measuring it. An instrument for determining the intensity of radioactive radiation should consist of an ion transmitter, an amplifying device, a power supply unit, and a registering (measuring) device.

All existing instruments based on the ionization method may be divided into two types: in the first, a so-called ion chamber is used as a counter, while in the second the counter is composed of ion particles.

The ion chamber, more often, is a cylindrical air capacitor, in which the electrodes are the metallic walls of the cylinder and the rods located along its axis.

The ion particle counter consists of a metal or glass tube with sealed ends and with a thin metal wire stretched out along its axis. If the tube is made of glass, then the outside of it is covered with a layer of a compound which can carry current. The hollow center of the counter is filled with a mixture of gases. The wire within the counter serves as one electrode, while the metal walls of the tube (or conductive layer) serves as the other.

The instruments used by the counter as a transmitter are, as a rule, more sensitive than the instruments with an ion chamber.

The basic instrument used in radiation reconnaissance is the roentgenometer. This instrument is intended for the measurement of the level of radiation. It consists of an ion chamber, direct current amplifier, measuring instrument (microammeter) and source of power supply. On the surface of the instrument's panel are to be found only the levers of the simple control and measuring device. The roengenometer is made fast to the chest of the operator by leather straps, at a height of 0.8-1 meter from the surface of the ground.

To determine the degree of contamination of the surface of various objects, armaments, decks of vessels, foodstuffs, soil, and water, as well as for verifying the completeness of sanitary processing and disinfection, an instrument called the radiometer is used. There are alpha-radiometers and beta-gamma radiometers, with the latter being used to measure the degree of surface contamination, as well as being used to measure small levels of radiation. It consists of two parts -- the control panel with its measuring device, plus a gauge in the form of a metallic tube with a counter at its tip. The gauge is connected to the control panel by a flexible cable, with the control panel being strapped to the chest of the operator. In searching, the end of the gauge containing the counter is held up to the contaminated surface and a reading is registered on the dial of the control panel. The operator is equipped with earphones to carry on his search by ear.

As has already been indicated, one of the measures providing protection for personnel from contamination by radioactive substances is a dosimetric check, or check by radiation counter, of their exposure in a contaminated zone. Such a check may be a group or individual one. A group check for exposure is conducted with the aid of portable dosimeters or radiation counters, readings on which will testify to the sum dosage of radiation to which personnel were exposed during their stay in the contaminated area. It can also be effected by measuring the level of radiation with a roentgenometer and measuring the length of time spent by personnel in the area of contamination.

The individual dosage measurement check kit consists of a compact ion chamber and a charging-measuring device. The ion chamber is a metallic cylinder, in the shape of a fountain pen, which has a metal wire stretched along its axis. The walls of the cylinder and the wire filament are the electrodes of the capacitor, charged to a specific potential. Under radiation, the ions formed between the electrodes of such chambers accumulate upon them and neutralize a portion of the charge. The decreased charge in the ion chamber, as determined by the dial, testifies to the quantity of radiation dosage received.

There are also a number of other, more complex dosage metering devices or radiation counters, intended for determining the degree to which air, water, soil, foodstuffs, etc., have been contaminated by

radiation. However, the devices listed above are fully sufficient for conducting radiation reconnaissance of areas contaminated by radioactive substances, determining the boundaries of those areas, the level of radiation, as well as for checking upon the radiation received by personnel.

It is thought that radiation reconnaissance should be carried out in two stages. The first stage is a rapid search, the aim of which is reconnaissance of contaminated areas and determination of the levels of radiation within them. Here, a search is made only of the vitally important areas of the ship or areas in the region of combat operations. In the latter case, reconnaissance through maneuvering is utilized, particularly with the need to search out large areas of contamination.

A detailed search is conducted with the aim of determining the degree of contamination of various surfaces of objects, and for pining down the level of radiation, and requires considerably more time. In such a search, contaminated objects are uncovered which were not noted in the initial rapid search, and samples are taken from various surfaces to determine the degree of their contamination, and to conduct laboratory analysis.

The enemy's use of an atomic weapon can be discovered by observing the general physical phenomena accompanying an atomic explosion; similarly, explosion of bombs, shells, and mines containing combat radioactive substances (BRV) can be distinguished by characteristic signs. Radiation observation about ship and in units, therefore, should be carried out without delay.

However, results of the radiation observation cannot provide a complete picture of the existing radiation situation. A reconnaissance of the contaminated areas needs to be conducted in order to determine the degree of contamination and the level of radiation.

The organization and conduct of radiation reconnaissance aboard ship and in shore installations have their own peculiarities. Aboard ship, for example, it is not always possible to remove personnel from contaminated areas. Therefore, radiation reconnaissance aboard ship should be carried out in the shortest time possible. In order to do this, it is necessary to do a rapid reconnoitering of as much of the ship's deck and interior as possible with a minimal expenditure of time.

Data on the radiation situation should be transmitted through the ship's communication system. Generalized data on the reconnaissance is then reported to the ship's commander in order that he may make his decisions. First, special conditions for the behavior of personnel are established, while the limits of the contaminated areas are designated by flags of different colors or by other special warning signs. Although,

in the course of time, the level of radiation in the contaminated areas will decrease as a result of the breakdown of the radioactive substances, careful attention must always be paid to the signs designating contaminated areas, regardless of when they were set up. The shifting or removal of such signs can be carried out only after lowering of the level of radiation to a tolerable norm has been established through the aid of dosimetric or radiation counter devices. It is on the basis of reconnaissance results that a decision is adopted on the partial or complete disinfection of the ship and the medical treatment of its personnel.

Since fresh water is needed for various every day needs aboard ship, it is necessary also to determine the degree of its contamination. This determination is made by taking a sample of the water and analyzing it.

Radiation reconnaissance of the immediate area and, depending upon the task which has been set, of the character and extent of the contaminated region, may be carried out using naval aircraft, helicopters, fast cutters, and other means.

More effective is radiation reconnaissance which has been carried out from the air, permitting the acquisition of valuable data which is impossible to acquire as quickly any other way. From an airplane or helicopter a reconnaissance can be carried out regardless of the degree of destruction or contamination of the zone surrounding the atomic explosion. Flying at a set course at a height several hundred meters above the region of the explosion, an airplane equipped with the proper dosimetric or radiation detection devices can record the intensity of the gamma rays and set down on a map the preliminary boundaries of the contaminated area.

Radiation reconnaissance of a port area, in view of the existance of a great quantity of wooden and reinforced concrete structures and the possibility of their collapse and being set afire, represents a more complex task. The less contaminated areas of ports may be investigated on foot by scouts or through the use of motor vehicles (in using motor vehicles, dosimetric devices are turned on from time to time). Contaminated areas with higher levels of radiation, of course, should be checked by scouts using special means of transport (as armored carriers, tanks, etc.). The boundaries of contaminated areas are marked by warning signs labelled "Contaminated by Radioactive Substances," indicating the level of radiation, and the date and time of marking. It is necessary to indicate the time because the level of radiation decreases comparatively rapidly.

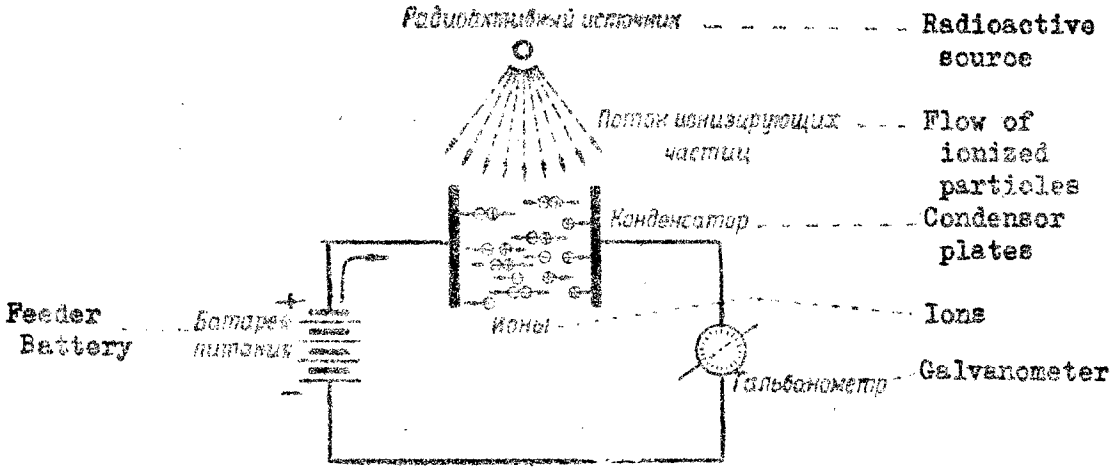
In making a reconnaissance of the port area, a chart of the contaminated area is drawn up, indicating the degree of radiation

within it. The chart should specify places where it can be crossed on foot or driven across through areas with a lesser degree of radiation. Passages should be designated by arrows. On the basis of such charts, there can then be worked out a plan of steps which are to be taken to liquidate the consequences of radioactive contamination.

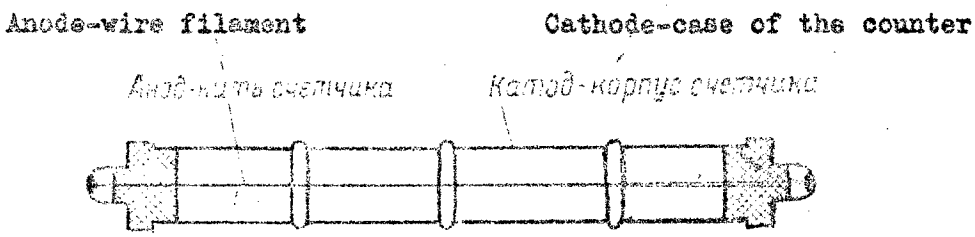
The proper organization of radiation reconnaissance, the swift discovery and blocking off of contaminated areas, the timely disinfection of weapons and combat materiel, and measures for the medical treatment of personnel will facilitate the successful fulfillment by our troops, under conditions of radioactive contamination, of the combat missions which have been assigned to them.

Troops which are strong in spirit and physically fit, who know the capabilities of atomic weapons and the means for defending themselves from them, will be able to carry on active combat operations under any conditions, and will triumph over an enemy equipped with any weapon.

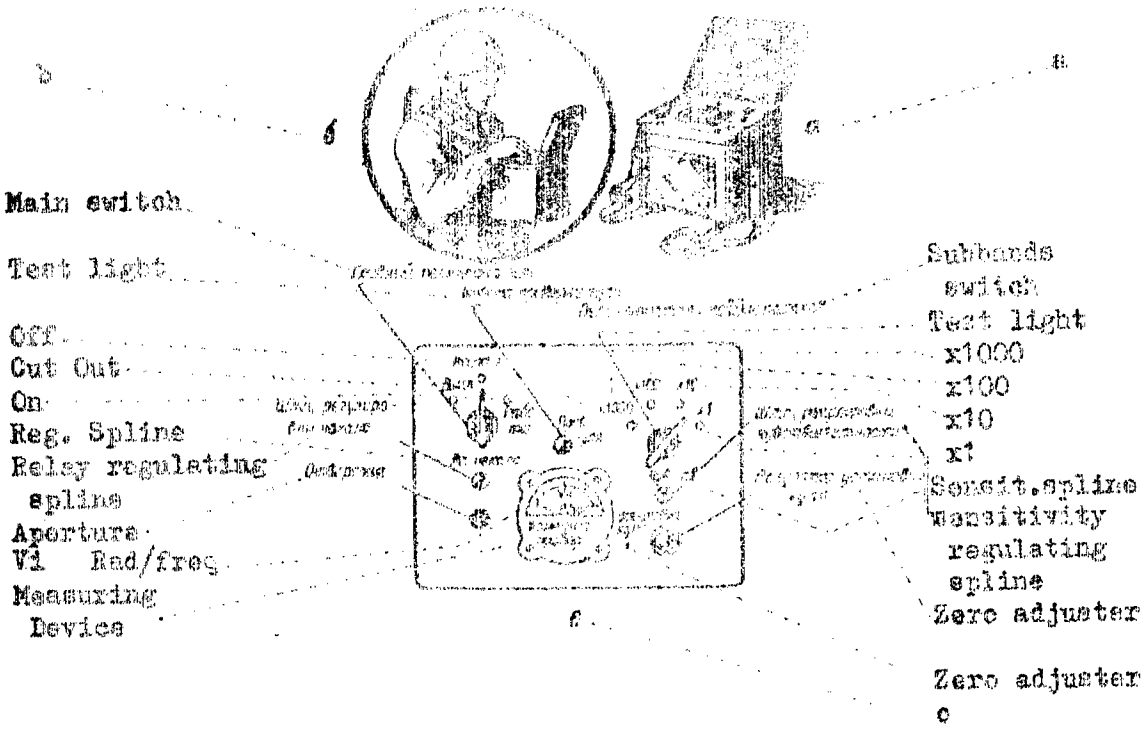
FIGURE APPENDIX



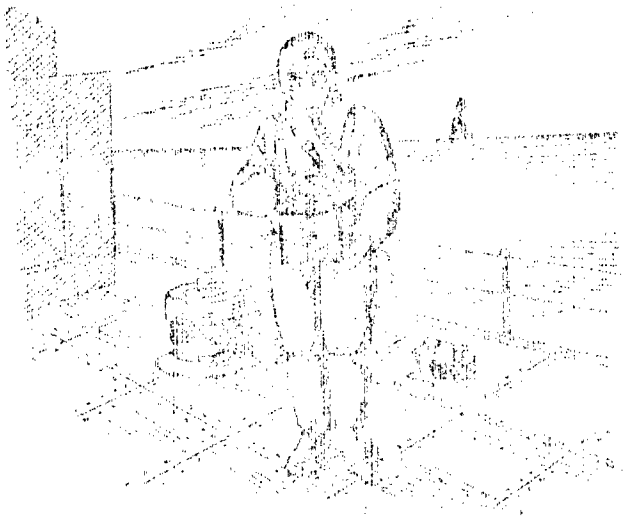
No. 34. Operating Principles of an Ion Chamber



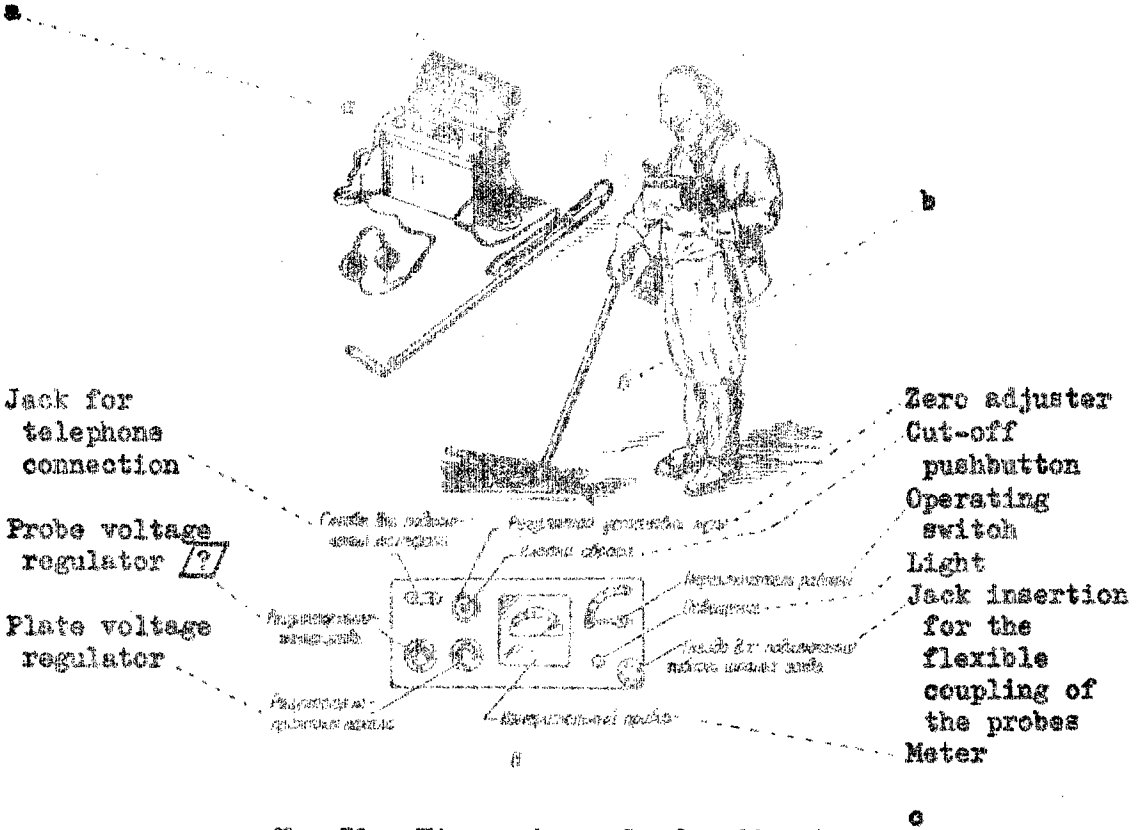
No. 35. Diagram of the STS-5 gas-filled radiation counter tube



No. 36. View and control panel of roentgenometer
a - View
b - Operating a roentgenometer
c - Control panel of the roentgenometer

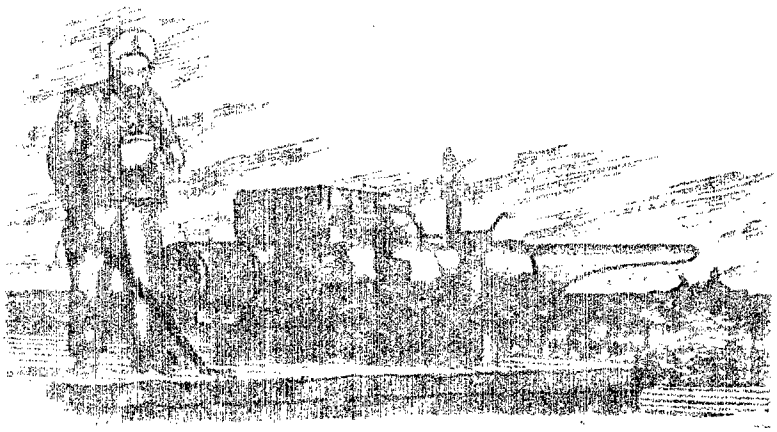


No. 37. Operating a Roentgenometer

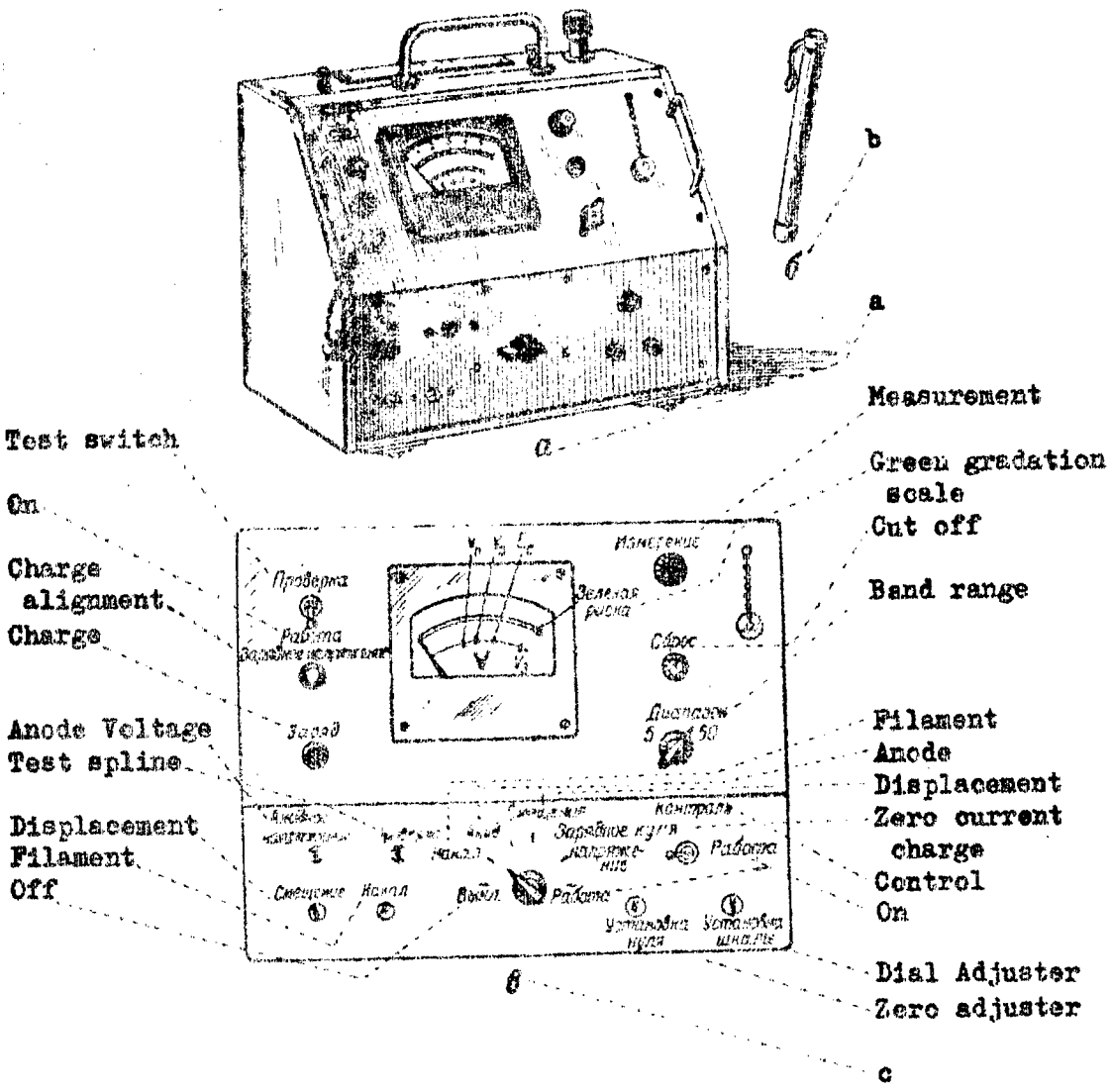


No. 38. View and panel of radiometer

a - View
b - Operating a radiometer
c - Radiometer panel

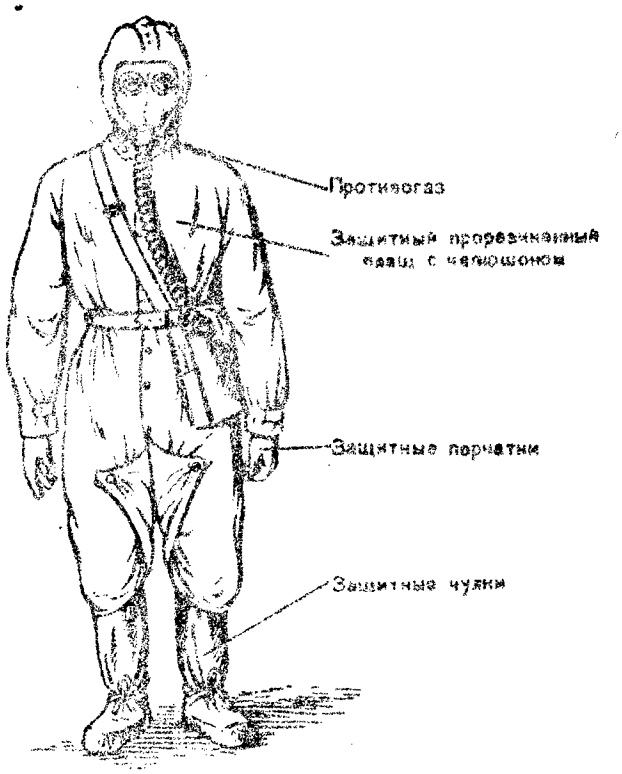


No. 39. Shipboard operation of a radiometer



No. 40. View and front panel of the individual dosage measurement device.

a - View of the charge measuring apparatus;
b - View of the individual dosimeter;
c - Front panel of the charge measuring apparatus



Gas mask

Protective rubberized clothing

Protective gloves

Protective footwear

No. 41. Seamen's individual means of antichemical defense

WHAT ARE THE DANGERS OF TESTING NUCLEAR WEAPONS?

Atomnaya Energiya i Flot
/Atomic Energy and the Navy/,
Military Publishing House, 1959, Moscow,
Pages 134-146
Russian, bk

Engr-Lt. Col. A. Sedov, Docent,
Candidate of Technical Sciences

Atomic and thermonuclear weapons occupy a prominent place in the war plans of the USA and other capitalist nations. The USA, in carrying out its plans for the preparation of a new world war, continues to increase its production of armaments with each year, to build up its reserves of atomic and hydrogen bombs, and to conduct nuclear research on a broad scale. As is known, during the period 28 April-26 July 1958 alone, i.e., in three months' time, observation stations of the Soviet Union located at a distance of 5,000-6,000 kilometers from the testing spot, detected 32 nuclear explosions set off by the Americans in the Pacific. During the period from the end of April to the end of October 1958, the USA and Great Britain exploded about 60 atomic and hydrogen bombs, with three-four nuclear explosions sometimes taking place within one day.

Testing atomic weapons strongly poisons the atmosphere, soil, and the waters of seas and oceans, has a harmful effect upon the health of people, and threatens the life of future generations.

Let us examine in detail two of the basic questions connected with the carrying out of nuclear tests. First, how the air, soil, and water are poisoned by the radioactive products of the explosion, and the danger this represents for mankind. Second, how nuclear explosions are detected, and what methods may be used to check on the general curtailment of nuclear tests.

Radioactive Poisoning of the Air, Soil, and Water

In nuclear explosions, great quantities of radioactive products are always formed. Part of them come down to earth at distances of 50-150 kilometers and more in the course of several hours after the explosion. Part of them, in pulverized form, are carried over very great distances and even around the world by wind currents, and gradually fall down to earth mixed in with rain and snow. This fall-out goes on for years; therefore, our entire earth gradually and more and more is being poisoned by radioactive substances.

Following the explosion of a small or medium bomb, the cloud of dust usually remains in the troposphere, reaching heights of 7-12 kilometers. Moving with the wind, this cloud of dust spreads out vertically and horizontally and poisons the lower layers of the atmosphere.

In the end, this radioactive dust leaves the atmosphere, either being washed out by rain or by settling directly upon the surface of the earth. The rate of settlement of these dust particles in calm air depends upon their size. For example, particles 0.1 millimeter in diameter, falling from a height of 12 kilometers, reaches the earth's surface in four hours, while particles of 0.01 millimeters in size require about two weeks to do this. The settling of even smaller particles takes place usually in connection with precipitation. On the average, one half of the fine dust formed through the explosion of a comparatively small bomb, is washed out of the atmosphere by rain in the course of several weeks.

With the explosion of a bomb whose TNT equivalent is millions of tons, the radioactive cloud reaches into the stratosphere, attaining a height of 30 kilometers or more. The settling of radioactive particles in this case is much slower, with the greater portion of them remaining in the atmosphere for a long time. Reaching the stratosphere, the dust is then subject to the action of the winds, which blow predominantly to the west and east at a speed of approximately 1,000 kilometers a day. At first, the products of this fission fall from the stratosphere into the troposphere, in all likelihood through turbulent diffusion, and from there fall to the earth together with the fallout. Inasmuch as the fallout process goes on for a sufficiently long time, the poisoning of the earth's service is caused almost exclusively by such long-lived fission products as Strontium 90 and Caesium 137. As measurements have shown, from 10 to 20 percent of the dust formed from a powerful thermonuclear explosion settles down upon the earth in the course of a year.

The measure of contamination by radioactive substances of a land or water area, and the degree of such contamination, depends chiefly on the might and the type of explosion, as well as on meteorological conditions. Nuclear explosions carried out by the US in the Pacific have been accompanied by considerable fallout of radioactive elements over an extensive area of the open sea, islands, and other areas of that ocean's basin.

The American press announced that the surface explosion of a thermonuclear device (with a TNT equivalent of 12-14 million tons), carried out by the USA in the Pacific on 1 March 1954, subjected to radioactive contamination an area extended by the wind to 350 kilometers long and 64 kilometers wide. From the windward side, radioactivity was discovered at distances of up to 32 kilometers away. Staying in an open spot for 36 hours, a man would have exposed himself to mortal danger at distances of up to 220 kilometers from the point of the explosion. The Japanese fishing vessel, "Lucky Dragon," which, during the test, was located approximately 140 kilometers from the point of ex;losion, was in the area of radioactive dust fallout. All of the fishermen suffered serious radiation burns, and one of them died.

American nuclear explosions in the Pacific are creating a threat to peaceful marine navigation. In the summer of 1958, during the most extensive series of nuclear weapons tests carried out by the Americans, the Japanese research ship "Takuyo," which was conducting research work in the region of the Pacific Ocean in accordance with the plan for the IGY, and the "Satsuma," a patrol vessel accompanying it, were subjected to intensive radioactive radiation. Thirty-seven members of the ships' crews fell ill. Both vessels were compelled to leave the danger zone.

The Soviet expeditionary vessel, the "Vityaz'," returned ahead of schedule in June 1958 from its third cruise under the IGY. It was impossible to continue the scientific research work being conducted in the center of the Pacific Ocean because of the increased radioactivity.

Radioactive substances mixed in with air can reach living quarters aboard ship as well as the engine room and create a considerable level of radiation there. Not excluded either is the possibility of radioactive substances reaching the drinking water, if the water evaporation equipment is not equipped with the proper filters. The contamination of water used for technical purposes might also be a danger for the ship's crew.

People living beyond the bounds of the zone established by the Americans, were also seriously threatened as a consequence of the nuclear tests conducted by the USA in the Pacific. Representing a serious danger to life was the radioactive poisoning of sea waters and the contamination of fish, used as food by inhabitants of the islands. Many instances have become known of fish catches having to be destroyed because they proved radioactive. Thus, in 1954, fish which had been caught at great distances, because of the 3,000-kilometer radius of the sector (with its center in the area of Bikini), which the USA had set up, had to be destroyed in a number of instances. Radioactive substances in the waters of the sea is first absorbed by the plankton -- the tiniest organisms floating in the water, which is in its turn absorbed by fish. Measurement showed that the radioactivity accumulating in plankton and in fish exceeded by hundreds and thousands of times the radioactivity of the water.

Up until recently it was supposed that waters in the ocean depths do not intermingle with surface water and, on this basis, it was considered possible to bury radioactive wastes of atomic industry in deepwater depressions. In this connection, it was also considered that deep underwater explosions represented no danger from the point of view of radioactive contamination. Factual data from the oceanographic research carried out by Soviet scientists in 1957-1958 aboard the research ship "Vityaz'" showed that deep waters intensively intermingle,

both horizontally and vertically, and that, as a consequence, radioactive substances inescapably reach the surface layers of ocean waters and are swallowed up by plant and animal organisms sooner or later.

Among the radioactive substances formed during an explosion, are such long-lived radioactive isotopes as Strontium 90 (whose period of semi-disintegration is 29 years) and Caesium 137 (whose period of semi-disintegration is equal to 33 years). They represent the chief danger in nuclear tests. With every year their contamination of the earth's surface increases. Evidence of this is the graph expressed in Figure No 42a. This graph, which was published in the foreign press, shows how the concentration of Strontium 90 on the surface of the earth in England is increasing. The press noted that if nuclear tests continue at the same rate as they have been held in recent years, that within 100 years the concentration of Strontium 90 in the soil will reach about 0.2 curies per square kilometer (the permissible content of Strontium 90 in the human organism is equal to one ten-millionth part of a curie).

Strontium and caesium are actively absorbed by plants and, together with plant food, reach the organisms of animal and man. Strontium 90 settles in the bones and causes bone marrow and cells of the bone tissue to be subjected to constant irradiation. In comparison with other long-lived isotopes formed through nuclear explosion, it plays a particular role. This is explained by the high concentration of Strontium 90 in fissionable products, its capacity to accompany calcium in the human metabolism, the ease with which it is absorbed in the blood and, finally, by its ability to hold on for a long time in the bones.

Inasmuch as the concentration of radioactive fallout dropping on the earth's surface is not a great one, the doses of irradiation from them will also be small. The biological problems arising from this belong to the least investigated field of radiation diseases -- that of the field of the chronically small forces (vozdeystviye) threatening the entire population of the earth.

Through practical work with radioactive substances, the approximate permissible dosage of radiation has been worked out. It is assumed that small doses do not cause any harmful effects upon one's health, i.e., the effect of the radiation was a marginal one. If the radioactive substances penetrate the organism, then it is required that the radiation not exceed the permissible norm not only for the organism as a whole, but for the organ into which those substances might settle (such an organ is then called critical). For example, in reaching the organism, only the bones are subject to strontium radiation. Caesium 137, which settles in soft tissues, is eliminated from the organism 150 times faster than is Strontium 90; therefore, its effect in evaluating the dosage in a critical organ can be disregarded.

At the present time it is considered well established that, in regard to genetic consequences, the effect of any dose of radiation may be harmful. In a given instance, the effect of radiation created by Strontium 90, Caesium 137, and Carbon 14 (formed by neutrons from the nitrogen in the air), is accepted as being unforeseeable (besporogovyy). Chronic radiation in small doses can evoke not only diseases of genetic origin, but can cause certain other biological damage as well.

The Soviet scientist O. I. Leypunskiy (author of the article "The Radioactive Danger of Uninterrupted Tests of Atomic Bombs," published in the journal Atomnaya Energiya (Atomic Energy), Vol 4, No 1, 1958) determined the power of dosage in bones from Strontium 90, and came to the conclusion that prolonged conducting of nuclear tests is intolerable because it will cause a great number of people to receive doses which are close to bordering on the permissible limit in critical organs (in the vertebrae). If one were to take into consideration the radiation danger issuing from the concept of the unforeseeable effect of radiation, then, according to the evaluation of O. I. Leypunskiy, each year that the test explosions continue will bring about the appearance, in the course of time, of a significant number of leukemia cases and of genetic victims.

How Nuclear Explosions Are Detected

A conference of technical experts held in Geneva in July-August 1958 to study methods for detecting nuclear explosions, was aimed at working out an effective system of checking upon observance of a possible agreement on the general halting of nuclear weapons tests. Representatives of the USSR, USA, Great Britain, Canada, Poland, Romania, Czechoslovakiz, and France took part in the conference.

On the basis of work done at the conference, it was established that present-day methods of detecting nuclear explosions, based upon registration of radio signals, acoustical, hydroacoustical, and seismic vibrations, as well as radioactive products, allows us not only to establish the fact that a test has been carried out, but to determine the type of explosion and its power. With the aid of the methods named, it is even possible to detect and determine explosions of atomic charges of small power (with TNT equivalents of 1,000-5,000 tons) also.

The acoustical, hydroacoustical, and seismic waves formed in the air, water, and the earth's core, as well as the electromagnetic waves and radioactive products formed by nuclear explosions are depicted by the sketch in Figure 42b. They serve as indications of nuclear explosions and comprise the physical basis used in methods to detect them.

Let us examine the above-mentioned methods for detecting nuclear explosions, which methods, in their totality, allow us not only to detect the explosion and to establish the spot where it took place, but also to determine its fundamental indices (power and type of explosion, type of nuclear weapon).

a) The Method of Registering Acoustical Waves. As is known, initially at the point of explosion there is formed a field of extraordinarily high pressure, which results in the origin of shock waves. The pressure diminishes as the shock wave spreads, while the speed of the shock wave front gradually approaches that of the speed of sound. Thus, the sound (acoustical) wave, like a shock wave, consists of alternating compression and rarefaction, and differs from the latter only in its intensity.

The pressure and condensation caused by the sound wave is very small in comparison with the pressure and density of a given medium. Actually, even with a loud sound the force of which is close to the threshhold of bringing on the sensation of pain (such as a whistle to someone standing near a locomotive), the amplitude of the pressure is only .003 the pressure of one atmosphere. If the speed of a sound wave ranges from 20 to 15,000 per second, so does the vibration received as sound by the ear of man. Vibration caused by lower speeds are called subsonic, while those caused by higher speeds are called ultrasonic. One and the other can be detected only with the aid of special devices. Subsonic vibrations, as demonstrated by experiments and theoretical research, are more weakly absorbed or deadened by the air than high frequency sounds and, consequently, can be detected at greater distances from the source of the sound. The propagation velocity of sound waves in dry air at a temperature of 20 degrees is equal to 344 meters per second, and to 1,450-1,500 meters per second in water.

Sound waves are easily registered, for example, with the aid of electroacoustical sound receivers, which transform the vibration of the resilent force (air, water, etc.) into electrical energy. Microbarographs can be utilized to receive air acoustical waves. Microbarographs, like barographs or barometers, are recording instruments intended for the uninterrupted registration of atmospheric pressure, and are distinguished from the latter by their very high degree of sensitivity (they can even react to gusts of wind).

The amplitude of an air acoustical wave is directly proportional to the cube root of the power of the explosion, is reversely proportional to distance, and depends strongly on meteorological conditions (wind, temperature, turbulence in the atmosphere). A nuclear explosion, equivalent to the explosion of 1,000 tons of TNT, can be detected at distances of 500-3,000 kilometers, depending upon the direction and speed of the wind in the atmosphere.

In order to determine the place and time of explosion, it is necessary to know the direction from which the sound signal is coming and the speed of its propagation. For this purpose, the pressure pickups of microbarograph st tion are located approximately 10 kilometers from each other. The sensitivity of the station provides for the registration of a signal with the amplitude of .000001 the pressure of one atmosphere. On the basis of the readings from three stations, the site of the explosion can be determined with an error of less than 100 kilometers.

During the first experimental explosion of the atom bomb in Alamogordo, the explosion was heard at a distance of 240 kilometers. Of course, with the aid of instruments more sensitive than the ear, the sound could have been picked up at a considerably greater distance.

In studying the propagation of sound in water, Soviet scientists uncovered and investigated the phenomena of the so-called super-long distant propagation of sound waves. It was established that, at a specified depth, sound is absorbed very poorly. Utilizing this phenomena and sound directional finding it is possible to register a comparatively small explosion in the water at a distance of about 10,000 kilometers.

b) The Method of Registering Seismic Waves. In an underground explosion, as well as in an explosion close to the surface of the earth, seismic waves -- longitudinal, transverse, and direct -- are created. The longitudinal wave spreads itself through the earth's core at a speed of approximately eight kilometers per second, and is a wave of compression and expansion. Sound waves are an example of longitudinal waves in a gaseous medium.

The initial longitudinal wave is the most important in detecting, determining the site of the explosion, as well as for distinguishing the explosion from an earthquake. The transverse waves appear later than the longitudinal waves, because their speed is roughly 50 percent less. These waves are formed only in solid media. As these waves travel through it, the particals of the medium move or fluctuate perpendicularly to the direction of the movement of the waves. Surface waves, in essence, unite in themselves the characteristics of both waves. Transverse and surface waves also aid in determining the nature of the seismic agitation.

Under favorable sound conditions, that is, with the absence of strong interference, an atomic explosion equivalent to the explosion of 1,000 tons of TNT, can be detected at a distance of 1,000-3,500 kilometers; under poor conditions, a more powerful explosion can be detected at those distances.

Just as in earthquakes, a special instrument -- the seismograph -- is used to register vibration set off by the explosion. The basic part of the seismograph is the pendulum, to which is attached the registering device for recording the vibration. Electrical pick-up methods are used for the detection of weak seismic signals, which methods facilitate the adequate magnification of the signal. Seismographs are vertical or horizontal, depending upon the form of the vibration they are to register. Control posts carrying on seismic observations are equipped with several vertical and horizontal seismographs, located at a set distance from each other. It is preferable to pick out a spot for their installation in areas with a minimal level of natural earthquakes, which create signals similar to those produced by an explosion. With the aid of a seismogram it is possible to determine the site of the explosion and to estimate its power.

In September 1957, at their atomic proving grounds in Nevada, the Americans carried out an underground explosion of an atom bomb equivalent in power to 1,700 tons of TNT. The bomb was set off in rock (volcanic tuff) at a depth of 270 meters. In the initial period after the explosion, representatives of the US Atomic Energy Commission stated that this explosion could not have been detected at distances of over 400 kilometers, and thus sought to belittle means for the further detection of nuclear explosions. Actually, the waves of the explosion were picked up at distances of about 4,000 kilometers. The conference of experts in Geneva confirmed the fact that similar nuclear explosions can be detected in places with low noise or hum levels at distances on the order of 3,500 kilometers.

c. The Method of Registering Radio Signals. Nuclear explosion in the atmosphere can be quickly detected by a method based on the registration of the electromagnetic waves created by the explosion, which are propagated through the air at a speed of 300,000 kilometers per second. These waves can be registered or picked up by special radio receiving devices in the form of radio impulses.

With underground and underwater explosions there is no radiation to be picked up over great distances by modern equipment. The source of the radio signals is the gamma radiation accompanying the explosion. The power of the signals depends upon the height and the power of the explosion and on certain peculiarities in the design of the bombs.

The explosion of a nuclear device with a TNT equivalent of 1,000 tons can be detected at a distance of over 6,000 kilometers, providing the area of the receiving station does not have a high level of noise from local storms or other sources of interference. Through radio directional finding it is possible to determine the direction to the center of the explosion with an accuracy of about two degrees, and the time of the explosion, with an accuracy of up to several milliseconds.

The registration of radio signals can be utilized for the detection of nuclear explosions carried out at heights of up to 1,000 kilometers.

d) The Method of Collecting Samples of Radioactive Products of the Explosion. A great amount of radioactive substance is created with a nuclear explosion. If a reaction involving the splitting of uranium or plutonium takes place, the products of the division (isotopes of strontium, barium, iodine, and many other elements) appear. A thermonuclear reaction results in the formation of Carbon 14, tritium, and certain other substances, as for example Manganese 54, which is formed under the action of swift neutrons against Iron 54.

Japanese scientists, in carrying out an analysis of the radioactive dust which fell upon the "Lucky Dragon" following the explosion of 1 March 1954, found in it a considerable quantity of Uranium 237. This isotope is formed as the result of the absorbtion of Uranium 238 by a superfast neutron and the resulting emission of two neutrons. Exceedingly few neutrons with a very great amount of energy are created under the reaction of fission; in a thermonuclear reaction, they are present in great numbers. On the basis of these two concepts, as well as consideration of the scale of radioactive contamination, a conclusion was reached that the Americans had set off a hydrogen-uranium bomb (a thermonuclear device in an uranium shell).

To collect a radioactive sample from the surface of the earth, a filtering device with a sufficiently large capacity is used, while various filter boards (planshety) are used to collect radioactive precipitates. In addition, filters installed aboard aircraft are used to collect samples of the air together with the dust contained in it. Measurement of the radioactivity of the filter and the analysis of the collected samples takes place in radiometric laboratories.

Systematic policing of the air and precipitates make it possible to detect a nuclear explosion through the appearance of increased radioactivity. Thus, the radioactivity of the rain, as measured in 1954 in various parts of Japan, rose sharply following every nuclear explosion at Bikini.

If specially equipped control posts were placed at distances 2,000-3,000 kilometers apart, the explosion in the atmosphere of an atomic bomb with a TNT equivalent of 1,000 tons could be reliably detected in a period of 5-20 days through increased radioactivity. With this, the time of the explosion will also be determined, albeit with certain inaccuracies. In certain instances, the site of the explosion may be determined roughly, if the meteorological data necessary for fixing the trajectory of movement of the radioactive cloud and particles of dust is known.

Nuclear explosions at great heights (over 30-50 kilometers) can be detected through the method of registering gamma radiation and neutrons, using satellites equipped with the necessary equipment. In addition, certain light phenomena and ionization of the atmosphere can be utilized for the detection of such explosions.

All of the methods for long-range detection of nuclear explosions listed above complement one another and make it possible to establish, without fail, the fact that an explosion has taken place, as well as to determine its site, force, and even the type of bomb used, with sufficient accuracy.

The network of control posts equipped with metering apparatus should be located both on the continents and the oceanic islands. Distances between the posts in continental seismic ares can be about 1,000 kilometers, and in regions where there are no natural earthquakes, about 1,700 kilometers. In the oceans, this distance can be increased to 3,500 kilometers or more. In addition to this indicated basic network of posts, a collection of air samples from aircraft should be carried out. The recommended network of control posts, together with the utilization of aircraft, would, according to the conference of experts in Geneva, provide a good probability for the detection and pin pointing of the explosion of nuclear devices with TNT equivalents of up to 1,000 tons, carried out on the surface of the earth and at heights of up to 10 kilometers. Explosions taking place at heights of 10-50 kilometers can also be clearly detected, but it is not possible in all instances to pinpoint its location. Thus, checking upon fulfillment of an agreement calling for a halt in the testing of nuclear weapons appears to be comparatively simple and reliable.

The Soviet Government, having carefully reviewed the results of the conference of experts, has agreed with all comments and recommendations regarding the system of control over the curtailment of nuclear tests set down in the reports made at the conference. The Soviet Union, which is consistantly advocating peace throughout the world, has done and is doing everything incumbent upon it in order to eliminate the danger of an atomic war. This task calls for the general curtailment of nuclear tests for all times and the complete prohibition of atomic and thermonuclear weapons.

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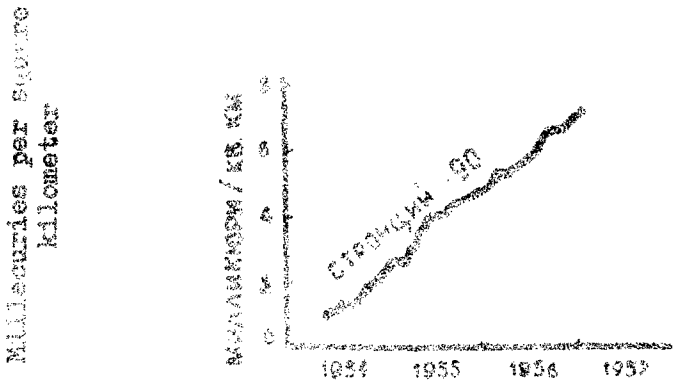
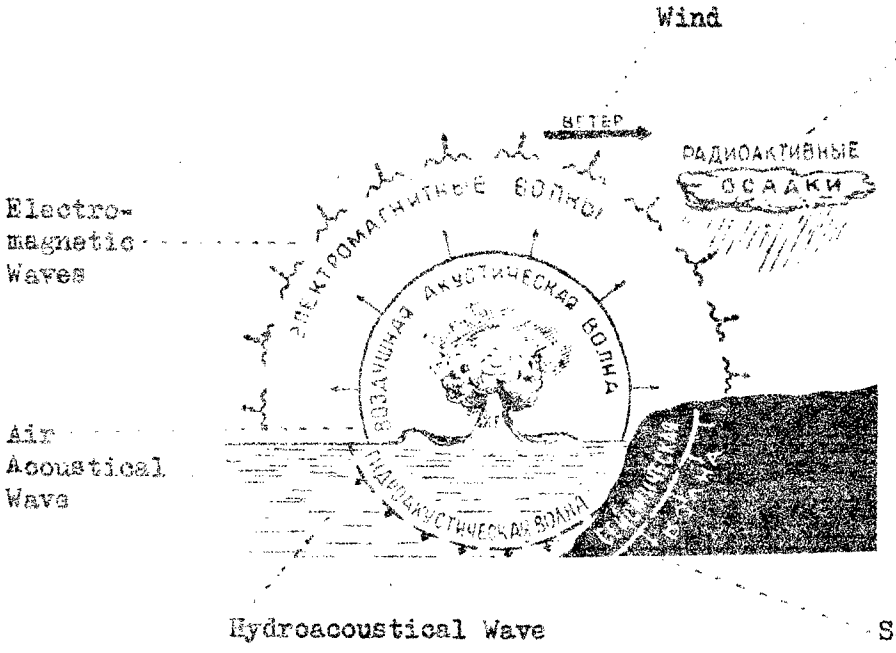
FIGURE APPENDIX



Strontium 90

No 42a. How concentration of Strontium 90 is accumulating on the surface of the soil in England.



No 42b. The acoustical, hydroacoustical, and seismic waves in the air, water, and in the earth's core, as well as the electromagnetic waves and radioactive products formed by nuclear explosions.

MICROCLIMATE ON SHIPS

Atomnaya Energiya i Flot
/Atomic Energy and the Navy/,
Military Publishing House, 1959, Moscow,
Pages 147-150
Russian, bk

Engr.-Capt 2nd Rank P. Khokhlov,
Candidate of Technical Sciences

One of the most important conditions for habitability, particularly with a naval vessel's lack of antiatomic defense or during a ship's long stay under water, is the maintenance of the proper temperature, humidity, and fixed physico-chemical composition of the air -- microclimate -- at command posts and battle stations. Certain navies use the so-called effective temperature concept as an index of fixed favorable hygienic conditions in ship's quarters. This term signifies a fixed combination of temperature, relative humidity, and speed of air movement.

Through experiments, Americans came to the conclusion that the most favorable conditions for the activity of personnel were created under air temperatures of 18-25 degrees in winter and 20-29 degrees in summer. With this, the relative humidity of the air should range within 30-70 percent, and the speed of its movement as it travels from the air distribution installation to quarters is about 5 meters per second. The indicated limits of temperature, humidity, and speed of air movement determine the so-called comfortable zone for the human organism. In the extremes of this zone, people begin to feel hot or cold.

As the result of the introduction aboard ship of measures for antiatomic, antichemical, and antibacteriological defense, particularly in the hermetic sealing of quarters, the level of heat retention within the ship's hull increases at such a rate that the usual system of ventilation cannot provide personnel with normal conditions of habitation. Therefore, in the post-war period, a number of navies have been seeking new means to facilitate the proper "microclimate" in ship's quarters.

In recent times, foreign navies have begun the wide-scale use of air conditioning systems and automatic air conditioners. These include a variety of technical means designed for the processing of the air fed into ship's quarters.

Depending upon the use for which the particular ship's quarters are intended, and the amount of heat retention within it, complete or partial air conditioning can be provided. The former is designed for year-around artificial maintenance of a set microclimate in quarters. It consists of an installation designed for cooling or heating, drying or moistening the air, filters for cleaning the air of mechanical admixtures (dust, radioactive particles), automatic regulation and control devices, pumps, regeneration units, ventilators, and the like. Automatic

regulators of the temperature and humidity (thermostats and humidity regulators) are the basic components of such systems.

Partial air conditioning systems are intended for the maintenance in quarters of some sort of specified quality of air, for example, for its cooling or heating (analogous to a system of refrigeration or radiant heating).

Complete air conditioning systems are often used aboard ships of foreign navies to provide "microclimate" for command posts, battle stations, for magazines, medical, living, and other ship's quarters, where personnel will have to be located during the threat of an atomic attack. These are being built into, for example, newly constructed ships of the US Navy (aircraft carriers of the "Forrestal" class, destroyers-missile carriers of the "Mitscher" and "Forest Sherman" class, patrol vessels of the "Dealey" class, and submarines of all classes, including the X-1 midget type), as well as new ships of the British, Canadian, and Swedish navies.

As the result of tests conducted by the American navy it was established that it would be more expedient to use sea water (zabortnaya voda), cooled in special freon water cooling coils, [a chemical retrigeraub] in air conditioning systems. Freon refrigeration installations are less bulky than their steam counterparts, and can therefore be situated in a more protected part of the ship. They have only a small length of pipes or coils for the circulation of the freon.

Aircraft carriers of the "Forrestal" class, for example, are being equipped with such installations. These consist of seven freon high-pressure compressors (with a productivity of up to 150,000 kilocalories per hour each), and the same number of condensors and freon coolers, about 300 air coolers, 400 air heaters, etc. The overall weight of the apparatuses and instruments is over 1,100 tons. Aboard these ships there are also small independent air conditioners intended specially for the compartment housing the remotely controlled machinery and boiler installations.

Closed low-pressure air conditioning systems are used on submarines. In these, the recirculated air is fed into the air cooler through a regenerating apparatus, with coolers placed in every separate compartment.

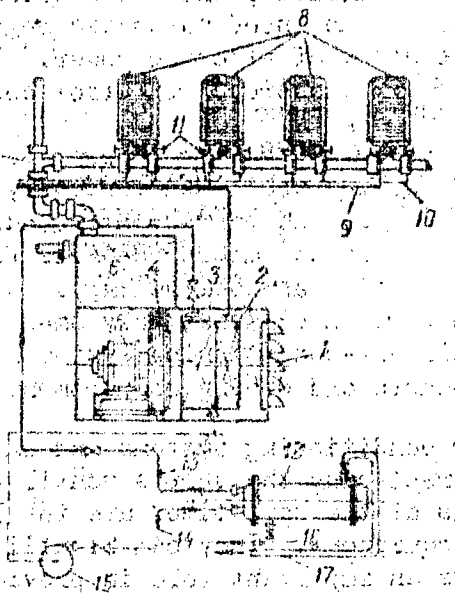
The Swedish navy has made wide use of a high-pressure installation for air conditioning in which the outside air is cooled to 13-15 degrees and is then fed at high speed through high-pressure ventilation pipes into heaters located in the quarters being serviced. Each air cooler housing has a coil through which hot water constantly circulates. These heaters can also be used as additional air coolers, by feeding cooled instead of hot water into the coils.

In comparison with the American, the Swedish installation is lighter in weight, more compact, does not need automatic regulation, and does not require a large expenditure of electric power. This permits their being used on lighter vessels (destroyers, patrol boats, etc.).

It is thought that aboard those ships where the installation of a complete air conditioning system would be difficult, it might be more expedient to make use of small, independent air conditioners with their entire complex of equipment and automatic controls for processing the air (cooling and drying, heating and moistening). Similar installations might be used as well in certain comparatively small quarters, even if the vessel has an over-all air-conditioning system (for example, in medical, food storage lockers and dining compartments, and others).

Modern complete air conditioning systems and independent air conditioners, which are replacing the ship's ventilation, steam heating, and refrigeration systems at the same time, are the latest word in heating and ventilation equipment. They can be utilized for work on a closed cycle, which plays an important role in providing antiatomic, antichemical, and antibacteriological defense for naval vessels, and permits an increase in the time submarines can remain underwater without surfacing. Installations for air conditioning can now by right be relegated to the rank of basic combat ship systems, having particularly important significance in contemporary warfare.

FIGURE APPENDIX



No. 43. Diagram of a High-Pressure Air Conditioning System:

1 -- filters for outside air;
2 -- electric air heaters;
3 -- air coolers;
4 -- high-pressure ventilator;
5 -- ventilator motor (electric);
6 -- noise mufflers;
7 -- high-pressure air conduit system;
8 -- air warmers (encased in metal boxes);
9 -- steam (water) supply;
10 -- condensed water;
11 -- valves for the manual regulation of degree of air heating;
12 -- water cooler;
13 -- cooled water feeder for air coolers;
14 -- drain for water from air coolers;
15 -- circulation pump;
16 -- feeder for refrigerant used in water cooler;
17 -- drain for refrigerant used in water cooler

MEDICAL (RADIOLOGICAL) PROCESSING ABOARD SHIP

Atomnaya Energiya i Flot
/Atomic Energy and the Navy/,
Military Publishing House, 1959; Moscow,
Pages 151-157
Russian, bk

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As is known, as a result of atomic explosions at sea the surrounding area and the ships in it can, to a grater or lesser degree, be subjected to contamination by radioactive substances. Radioactive contamination of ships is possible also through the use of combat radioactive substances by the enemy, by being showered by radioactive water (particularly through underwater explosions), or by the penetration of radioactive substances into the ship's internal quarters.

Medical (radiological) processing, as well as the disinfection of guns and equipment, should protect personnel from radioactive contamination, and make it possible for ships to carry out their active combat activities in the most complex of situations and at any distance from their bases. Military personnel who are strong in spirit and physically fit, who know the characteristics of atomic weapons and methods for protecting themselves from them, will be able to defeat the enemy and carry out their combat mission with honor under any circumstances.

Radioactive substances have a harmful effect upon people both through their penetration into the organism as well as through external radiation. Under the effect of a large dose of radiation, a person may fall ill from so-called radiation sickness. These substances may enter the organism through breathing (in the lungs), by swallowing (in the digestive-intestinal tract), or through a break in the skin (wound, burn). Having entered the blood, these substances imbed themselves in various organs and tissues, and act upon them for a long time through radiation (so-called internal irradiation).

Under external radiation, when radioactive substances come into contact with the surface of the flesh or the clothing of an individual, as well as with the air (for example, the mist of the base wave in an underwater explosion) and surrounding objects, beta-rays, whose penetration capabilities are not great as a rule, will be retained by clothing and even by the upper layers of exposed skin areas. Under intensive radiation, however, these can cause damage to the skin and to the eyes. Considerably greater harm may be done to the human organism through the external irradiation of gamma rays, which possess strong penetration capabilities.

Once radioactive substances have penetrated the organism, damage may be caused not only by gamma and beta irradiation, but by alpha particles also.

The degree of the harmful action of radioactive substances which reach the organism depends upon their quantity, chemical composition, and the character of the irradiation (gamma rays, beta rays, or alpha particles). With external radiation, the degree of damage is determined by the intensity of the irradiation and the amount of time personnel have been under their influence.

It is well known that there are no chemical or physical methods for destroying radioactivity and that it is impossible to change the speed and time of radioactive fallout. Therefore measures for protecting ship's personnel from the harmful effect of radioactive substances consist of warning of radioactive contamination (conducting regular radiation observation and reconnaissance, the sheltering of the greatest number of people within internal quarters and closed battle stations under the threat of an atomic attack, and the timely use by personnel, particularly those in open battle stations, of individual means of antichemical defense, etc.), and the removal of radioactive substances which fall upon the vessel (disinfection) and its personnel (medical-radiological processing).

In the radiological processing of personnel, a system of measures must be adopted, execution of which will bring about a reduction of the radioactive contamination of the surface of an individual's body to a tolerable norm, and the complete removal of radioactive substances which have fallen upon exposed skin and the mucous membrane of the eyes, nose, and throat.

Conducting this radiological processing aboard ship is necessary only in those instances when it has been established through dosimeters (radiation counters) that the radioactive contamination exceeds permissible norms. If for any reason it is impossible to determine the degree of radioactive radiation, but there is some suspicion of the presence of such contamination, a preventative sanitary processing is instituted.

Under conditions in which the enemy uses atomic weapons, it is particularly important for military personnel to carry out self aid and mutual aid in liquidating the consequences of radioactive contamination. The seamen's skill in immediately extinguishing burning clothing, in correctly applying bandages, in using the individual first aid packet (if the envelope is intact it has not been contaminated), in protecting himself from the penetration of radioactive substances into the organism, in rendering timely aid to his comrade who has become a casualty, and in his discipline and precise fulfillment of the rules of medical (radiological) processing, will enable personnel to retain their combat capabilities and successfully fulfill the task set for them by their commander.

Depending upon the conditions of the combat situation, and the character and degree of the contamination of individuals by radioactive substances, radiological processing may be either partial or complete.

Partial radiological processing is carried out at the first opportunity, right there at the ship's battle stations (even in the contaminated area), and is aimed at removing radioactive substances from exposed portions of the skin. Individual means of antichemical defense should not be removed in carrying this out however. Treatment of the exposed areas of the skin consists in bathing them (wiping them with a moistened tampon), and rinsing the mouth and nose with water which is clean and which has not been contaminated by radioactive substances. If there is no clean water near the battle station, a substance from the individual antichemical defense packet should be used for carrying out this partial radiological processing. In extreme instances, removal of radioactive substances from exposed areas of the skin may be done with the aid of any noncontaminated material (paper, rags, etc.). However, wiping the skin must be done with a great deal of care, without causing abrasions and scratches, because it is through these that radioactive substances might easily penetrate into the organism. Wiping should be done in one direction only, taking care not to spread radioactive substances onto uncontaminated portions of the body or into folds of the skin, which would be more difficult to treat.

Personnel who find themselves in a contaminated area without protective clothing should begin their partial medical (radiological) processing with the hands, necks, face, and other exposed areas of the body, and then, after having donned their protective clothing, proceed to the disinfection of the weapons and equipment at their battle stations. Following such disinfection it is necessary to repeat the partial radiological processing and, if there are instructions of the ship's commander to that effect, carry out a complete radiological processing.

Determining the presence of contamination of body surfaces by radioactive substances may be difficult at times. In such cases, one should concentrate on pollution of exposed patches of skin by dust or substances visible to the naked eye; these should be treated first.

Complete radiological processing is executed upon the decision of the ship's commander, following fulfillment of the combat mission. Conducting such processing is possible only at a decontamination point which has been set outside of the area of radioactive contamination. In the course of it, radioactive substances are removed from the entire surface of the body under direct control of a dosimeter (radiation counter).

Depending upon the specific conditions of the combat situation and the degree of radioactive contamination, personnel in need of complete

radiological processing are either sent immediately to the decontamination point, or the disinfection of the ship is begun at once, with the radiological processing to follow afterwards in accordance with the instructions of the chemical service.

Complete medical (radiological) processing about ship is conducted in the quarters of the medical service post (PSO). If the temperature allows, the carrying out of such processing is possible also at a special equipped area on the upper deck, or in the sea, river, or other noncontaminated and convenient source of water.

The medical service post has undressing, shower, and dressing compartments with special attendant personnel. The post quarters are divided into dirty (contaminated by radioactive substances) and clean portions.

On the upper deck of the ship, prior to entering the undressing compartment, personnel who have been subjected to radioactive contamination remove from themselves (with the aid of attendents dressed in protective clothing) all means of individual antichemical defense. Following this, they may then enter the decontamination compartment. Uniforms and underwear are removed in the compartment set aside for undressing, and a check made by dosimeter (radiation counter), in the course of which all areas of the body contaminated by radioactive substances are pointed out to the casualty; particular attention must be paid to these areas in washing and showering. Here also all documents and valuables are turned in for retention.

In the decontamination compartment the personnel receive soap and washrag and wash themselves under a hot-water shower. Whatever the system for setting up the medical service post, this washing should be done in the standing position only.

Washing the body should begin first with the more contaminated areas of the skin, as indicated by the dosimeter (radiation counter) operator during the course of the dosimeter inspection. Following this, and after carefully rinsing the washrag, the individual can then proceed to wash his entire body. He should begin with his hands, carefully checking the dirt under his fingernails. Then the head, neck, chest, back, abdomen, and legs should be washed. Particular attention here should be paid to washing the eyes, ears, and hair. Inaccessible portions of the back may be washed with the aid of the shower room attendent or a neighbor.

Following the shower and before leaving the shower compartment, personnel are subjected to a repeat check by the dosimeter to determine the quality of the radiological process he has undergone. If the degree of contamination of the body by radioactive substances proves higher

than the permissible norm, the casualty returns to the shower compartment for another bath.

Complete medical (radiological) processing is considered concluded if the radioactive substances have been removed from the surface of the man's body, or the degree of contamination has been lowered to permissible norms. In the dressing compartment, personnel receive clean underwear and uniforms, dress, and return to their stations. In the event that, upon completion of the radiological processing, there is need for rendering medical first aid, a medical post is placed into action.

Rendoring first aid to casualties in an atomic attack must be carried out with special care being observed. For example, wounds should not be touched with the hand or washed out with water, in order not to get radioactive substances into the wound. It is very important that the bandage be placed upon the wound correctly. A well laid-on bandage will securely protect the wound from contamination by radioactive substances. The same applies in rendering aid for burns. What must be remembered is that clothing adhering to the burned flesh should not be torn away. The bandage, in this instance, must be applied directly over the clothing. Nor should any blisters formed on the skin be opened. If the casualty is hemmorrhaging, the bleeding should be stopped there at his post, without awaiting the removal of the wounded man from the areas of the ship contaminated by radioactive substances.

Partial radiological processing of the wounded at their posts can be carried out only after medical first aid has been rendered, and complete radiological processing, decontamination, and the treatment of wounds and burns contaminated with radioactive substances done only at medical posts.

It is necessary to remember that meteorological conditions, together with other factors, have great influence over the degree of radioactive contamination of the area of the sea and the adjoining strip of shore. For example, snow aids the rapid fallout of radioactive particles. No small role is played by the force and direction of the wind. It is necessary, therefore, to take these factors into consideration and to use them in one's own interests.

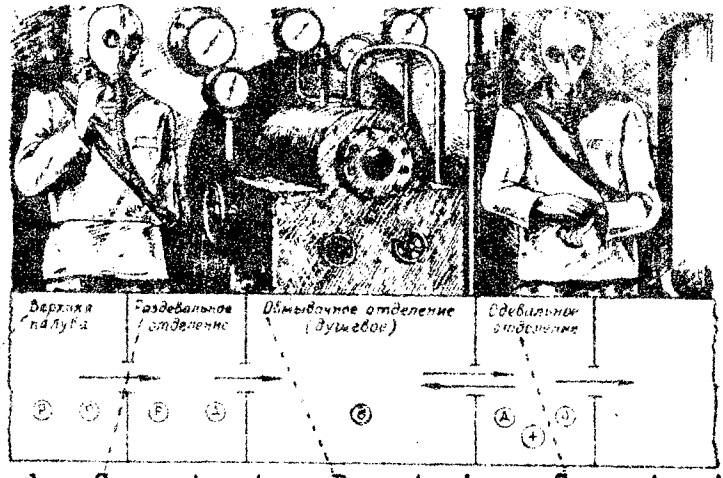
In winter the condition of doors, hatches, and manhole hatches should be examined especially carefully in order that snow or ice not interfere with their being closed securely.

In entering ship's compartments from the upper deck, uniforms and equipment must be carefully cleaned of contaminated snow. If conditions allow, following a fallout of radioactive particles, snow and ice should be fully removed from the upper deck, superstructure, and other portions

of the ship. On the other hand, uncontaminated snow may be utilized together with tampons for the partial processing of exposed areas of the body.

Correct and timely execution of medical (radiological) processing will ward off the harmful effects of radioactive substances on the human organism. Regular and careful carrying out of radiation observation, swift and precise execution of radiation reconnaissance, disinfection of the ship, and medical (radiological) processing of personnel will permit the liquidation, in the shortest time possible, of the effects of radioactive contamination, and provide the opportunity for carrying on active combat action leading to the defeat of the enemy under any circumstances.

FIGURE APPENDIX



No 44. Partial Medical (Radiological) Processing Aboard Ship

Below -- diagram illustrating the carrying out of complete radiological processing. R -- attendant; D -- dosimeter (radiation counter) operator; B -- shower attendent; ⊕ -- medical post; O -- dressing attendant

ATOMIC POWER UNITS ON SHIPS

Atomnaya Energiya i Flot /Atomic Energy and the Navy/,
Military Publishing House, 1959, Moscow,
Pages 197-202,
Russian, bk

Engr.-Rear Adm. M. Rudnitskiy

The use of atomic energy in the navy can provide considerable advantage to fighting ships. The distance the ship may cruise and the independence of action of a ship with an atomic power unit is increased considerably: it will then be limited only by its reserves of foodstuffs and munitions, the motor transportation potential of its mechanisms, and the endurance of its personnel. The advantage of an atomic power unit lies also in the fact that it can function at high speed for a considerable time, estimated at months and even years, without having to add to its stores of fuel.

Considering the high cost and complexity of atomic power units, it is considered more expedient at the present time to install atomic engines, in the first instance, on ships which must have a very great cruising range and a great deal of independence of action. The USA, for example, is constructing submarines equipped with atomic power units. Such ships, supplied with rocket weapons, are intended for offensive operations in naval theaters of operations far removed from the American continent.

The atomic unit provides a swift and secret passage for submarines in the area of their operation. Such ships are capable of making long cruises underwater, at great depth and at high speed, because it does not need to come to the surface periodically to charge its batteries, which an ordinary diesel-electric submarine could not do without. Recall how during World War II German submarines, functioning for a certain time off the coast of the USA, forfeited a considerable part of their independence of action (up to 50 percent) in their cruises to their area of operation and return. These cruises were carried out on the surface at a conservative speed (8-10 knots), with submergence in dangerous areas and in avoiding aircraft and anti-submarine surface ships. Great amounts of fuel were expended on those cruises.

Atomic submarines can complete ocean crossings two to three times faster than regular submarines, and the greater part of their action can be utilized for active operations. For example, the cruising range of "Nautilus" is 50,000 miles or more.

Thus, submarines with atomic power units could function against the enemy's lines of communication on all the oceans, proceeding from the most remote bases.

In the opinion of US military specialists, the combat operations of atomic submarines will also be more effective. It is known that, in World War II, cargo ship convoys had a zone of defense with a radius of 40-50 miles, which submarines had to overcome while submerged. Thanks to the use of aircraft carriers by convoys, this zone of defense was considerable extended. With its limited reserve of power, the diesel-electric submarine's penetration of this zone had to be carried out at low speeds, which made it very long, difficult, and dangerous. As a result of this, German submarines suffered great losses in the second half of the war. Commanders had to carefully figure their power reserves so that they could not only intercept the convoy and successfully attack it, but also be able to break away from anti-submarine forces following the attack. According to the foreign press, submarines with atomic power units can penetrate the zone of defense at high speeds (over 20 knots) and go through it several times faster, attack the convoy, and pursue it until its munitions are totally exhausted. An attack upon a convoy by such ships is possible from any angle of approach. Only attacks from the rear upon units of high-speed fighting ships, or upon cargo ships possessing great speed, will prove ineffective or completely impossible.

Finally, as a result of their superiority in speed and unlimited power reserve in travelling underwater, the new submarines can break off from the convoy's anti-submarine forces with comparative ease or destroy them.

Atomic submarines, equipped with rocket weapons, can operate effectively not only against the enemy's lines of communication, but against shore installations also. According to articles in the American press, the advantage of these submarines lies in the fact that they can appear in the most unexpected areas and get out of them swiftly after an attack.

The actions of atomic submarines, particularly in their mass usage, incredibly complicates the tasks of the other side's anti-submarine forces. For a successful struggle against them, a tremendous number of anti-submarine aircraft, helicopters, and light vessels with very great speeds (not less than 35-40 knots) is needed. Indications are that even with a strong anti-submarine defense losses of atomic submarines will be comparatively small.

Every atomic power installation is a heat engine, for whom an uranium reactor is the source of power. Metallic tubular rods, filled

with concentrated uranium, are its basis. When the amount of uranium 235 exceeds the so-called critical mass, a spontaneous nuclear reaction occurs, accompanied by the production of a tremendous amount of heat. It is sufficient to point out the disintegration of uranium 235 produces two million times more heat than that produced in burning the equivalent amount of oil. Control over the reaction is carried out with the aid of rods made of a material which absorbs neutrons energetically.

Power unit reactors can be filled with either slow or intermediate neutrons. A slow neutron reactor is used aboard the "Nautilus," in which the neutrons formed by the smashing of atoms are decelerated by water, which is at the same time the primary heat carrier. By means of special pumps, this water, under high pressure and at a temperature of about 250 degrees, is fed through the pipes of the so-called first circuit to steam generators, where it heats and evaporates water fed into it like an ordinary steam boiler. The steam from the steam generators is then directed into the turbine, which turns the ship's screw through reduction gear.

The water in the first circuit may be radioactive; therefore, for the safety of personnel, the reactor and the first circuit with its pumps, pipes, and armature must be properly shielded with special materials which absorb the radiation. The weight of the shielding is about one-third the weight of the entire unit.

In operating an atomic unit, special attention is paid to maintaining the density of the first circuit, filled with water having a high temperature and high pressure. If the density of the pipes is disturbed, water escaping into compartments of the ship will evaporate rapidly; together with this water, harmful radioactive gases might escape which would poison the surrounding atmosphere.

Atomic power units are equipped with automatic devices for checking on the radioactivity of its elements and the interior of the ship, particularly in those compartments where the reactors, first circuit, and steam generators are located.

During its operation, a powerful thermal atomic unit aboard a submarine generates a great amount of heat in the ship's interior. It is necessary, therefore, to have air conditioning units. These maintain a normal air temperature and moisture in the ship's compartments, permitting personnel to service mechanisms and armaments successfully.

The second American atomic submarine, the "Sea Wolf," uses an intermediate neutron reactor. Melted sodium is utilized as the heat carrier in the first circuit. The active elements in the reactor here are considerably more strongly enriched with uranium 235, and the speed

of the neutron is higher than in slow neutron reactors. The pressure of the liquid sodium is approximately ten times less than in units with reactors using heat neutrons, while the temperature is considerably higher. This permits the steam generators to produce high-pressure superheated steam, making the turbine portion of the unit more economical and less bulky. The temperature of the pipes is curbed by the density and the stability of the layers of the casing surrounding the uranium core in the reactor's active zone.

However, according to the American press, tests of the "Sea Wolf" turned out unsatisfactorily, because of the appearance of breaks and leaks in the pipes through which the liquid sodium was circulated, and which caused intensive corrosion. As a result of this the power of the unit was decreased, and the submarine was commissioned as part of the US Navy at the end of March 1957 for the purpose of conducting further tests.

In addition to the two types of reactors indicated, reactors in which helium is the heat carrier can also be used aboard ship. Helium is at the same time utilized as the operating element (rabocheye telo) in gas turbines. Theoretically, such a unit is very advantageous, inasmuch as helium possesses high thermal capacity, thermal transmission, and good nuclear characteristics. Such a reactor is being proposed for use on future American submarines. Great difficulties have arisen in working out a shield to protect personnel from radioactive irradiation, as well as in the struggle against high temperatures in compartments.

In the US, five submarines with atomic units have already been built and a number of others are still under construction. Particularly interesting among these is the submarine "Skipjack," launched in May 1958. It has a displacement of 3,000 tons, a length of 76 meters, and a projected speed for underwater travel of over 30 knots. Because of its short length and special lines, the ship should have good maneuverability qualities. The power unit consists of one water-cooled reactor and one screw. Forward horizontal stabilizers have been set up at the conning tower.

According to data furnished by the foreign press, the higher the power of the atomic unit, the more economical its application. Americans intend using these new engines on heavy aircraft carriers of the "Forrestal" class and other ships. Moreover, these units can be fitted in with greater convenience and greater accessibility to other components than on submarines. Ships thus receive a great deal of speed and a practically unlimited cruising range.

Despite the known difficulties, the development of atomic power units is moving forward very rapidly, and the time is not far when

their operation on almost all types of vessels, as well as on cargo ships and aircraft, will be possible.

Reactors producing atomic fuel through the formation of plutonium in uranium 238 under the action of a flow of neutrons should find application in atomic power units. The American scientist J. Lake, in his article entitled "On the Question of the Long-Range Development of Atomic Power Engineering," writes that the production of nuclear fuel can also be accomplished through nuclear reactions of thorium with the resulting formation of uranium 233 isotopes. Plutonium or uranium 233, in their turn, will serve as fuel, which, in the process of reaction, will not diminish, but will increase. The length of operation of such reactors, obviously, will be limited not by burning away of the atomic fuel, but by the stability and anti-corrosive stableness of the fuel element casings, whose length of deterioration can be measured in years. With the utilization of such reactors on any type of ship, their cruising ranges and independence of action will not at all hinge upon their reserves of atomic fuel.

According to S. Beale and J. Swarthout, so-called homogeneous reactors might be used in atomic units, reactors in which the atomic fuel is in the form of uranium salts in solution or in suspension, as distinguished from heterogeneous reactors, where the fuel is applied in solid form and locked into tubular fuel elements. Homogeneous units can be lighter and more compact.

Thus, the development of atomic technology in the imperialist countries, and in the USA primarily, is directed toward the frenzied armaments race.

Soviet navy men should thoroughly study and have a firm knowledge of the characteristics of these new means of combat and the methods for dealing with them, in order to be prepared for conducting successful operations under any conditions.

IMPORTANT EVENT IN DOSAAF LIFE

Sovetskiy Patriot
/Soviet Patriot/,
7 October 1959, Moscow
Page 2,
Russian, nsp

G. Shatunov,
Member of Presidium,
DOSAAF Central Committee

Very soon it will be time for reports and elections in DOSAAF organizations. They will promote a new upsurge in mass-defense and sport work and a further development in the drive, initiative and enterprise of DOSAAF organizations. Reports-elections meetings of primary organizations and the subsequent city, rayon and oblast conferences will mobilize still more the broad masses of DOSAAF members for the successful fulfillment of the decrees of the Fourth DOSAAF Congress and for an even more active and stubborn struggle to solve the tasks which devolve upon DOSAAF from the historic resolutions of the XXI Party Congress.

The reports and elections of the leading DOSAAF organs will take place under the circumstances of the successful completion of the first year of the Seven-Year Plan. In this period the DOSAAF organizations will sum up the results of their two-years' work on the fulfillment of the resolutions of the Fourth DOSAAF Congress, and the future prospects for intensifying DOSAAF's activity will be noted. This places an obligation on the committees and the large aktiv to concentrate on a profound study and dissemination of all useful experience gained in the primary organizations, on the elimination of shortcomings which have been uncovered, on intensifying the daily struggle for enlarging the scope and increasing the pace and quality of all mass-defense work, and on strengthening DOSAAF collectives organizationally.

A thorough preparation for, and a successful outcome of, the reports-elections meetings will be greatly facilitated by the local aktiv meetings, committee plenums, and conferences and seminars of representatives of DOSAAF committees, which are currently in progress.

The first and very important stage of reports and elections in DOSAAF consists of reports-elections meetings and conferences in the primary organizations. It should be noted that these links of the Society increased and strengthened considerably after the Fourth All-Union DOSAAF Congress. Many primary organizations are doing a great propaganda, mass-defense and sport job. With each passing day the number of militant defense collectives increases in Moscow and Leningrad, in the Ukraine and Belorussia, in every union republic, kray and oblast, and they are gaining more and more popularity among the toilers.

Let us take, for example, the primary DOSAAF organization of the Kostroma Flax Combine. A majority of the workers have been drawn into the society here; there is circle and sport work of various kinds; training the toilers in the "Ready for PVO" course of the first degree has been entirely completed. In all of the combine's shops there are stands and placards devoted to DOSAAF work. This year the organization has trained many technical specialists and hundreds of sportsmen. Such examples are increasing in number.

Relying on the aktiv and, above all, on the sections for mass-organizational work and propaganda, DOSAAF committees are called upon to come up promptly with concrete measures for helping primary organizations in the preparation for and conduct of the meetings. At the same time, of course, petty tutelage of, or substitution for, the chairmen of the committees is not permissible. Such cases were, indeed, noted in the past. Certain representatives of higher-ranking committees personally put together the draft resolutions and worked out the formal reports instead of telling and showing the chairman and members of the committee of the primary organization how it should be done. In this connection, it is very important to enhance the personal responsibility of the chairmen of the primary organizations for the preparations for the reports-elections meetings.

Reports-elections meetings in primary organizations devote their attention mainly to examining the progress of one or another defense collective in fulfilling the demands of the Fourth DOSAAF Congress for raising the level of mass-defense work; above all, the meeting examines the activity of the collective on questions of the PVO training of the toilers, the training of technical cadres and the development of sport work. One of the most important tasks of every reports-elections meeting is, naturally, to give DOSAAF members a clear response to the question of how the decisions of the Fourth DOSAAF congress are being carried out in a given organization and what precisely was done to improve DOSAAF work after the XXI Party Congress.

Our interests demand that all primary DOSAAF organizations consider as one of their most significant tasks the struggle for bringing a majority of the toiling people into their ranks. The feasibility of this demand has already been demonstrated many times. In the Petrovskiy Rayon of Khar'kov Oblast almost the entire adult population of the rayon has entered DOSAAF ranks. In the tallow combine in the city of Troitska, Chelyabinsk Oblast, only 15% of the workers belonged to the Society before the DOSAAF Congress. The committee, led by Comrade Nikitin, mobilized a large aktiv and, with the help of the party organization and with the active participation of the Komsomol and trade-union committees, brought it about that almost everyone working in the combine now belongs to DOSAAF.

In order to achieve the success we desire, it is vitally important, as experience has shown, that all chairmen and members of committees and all aktivists conduct explanatory work personally among the toilers and that they be imbued with a profound understanding of the importance of this task.

Continual improvement in mass work is the decisive requirement for growth in the activity and militant spirit of each primary DOSAAF organization. Numerous examples in the activity of the Moscow and Kostroma oblast, the Krasnodarskiy Kray and a number of other DOSAAF organizations bear evidence to the fact that the most significant practical results are achieved by those defense collectives which continually strive to draw new members into DOSAAF and which unite around themselves a strong, enterprising aktiv.

The basic content of committee reports to the meetings and conferences should not be an enumeration of what has been done, but a profound and thorough analysis of the activity of the defense collective, of the forms and methods of its mass-defense work, and the ways to improve it in the light of the tasks currently confronting the society. At the same time, special attention should be given to a demonstration of what the committee is doing to improve work with the aktiv, how it is using the initiative and enterprise of DOSAAF members, and how closely it works with the trade-union and Komsomol organizations.

All due attention will undoubtedly be given at the meetings to successful experience in order to make clearer and more persuasive the possibilities of our work and to disclose reserves not yet tapped and potentialities for improving our work. However, this does not at all mean that the DOSAAF members who deliver the reports and take part in debates should engage in self-praise and avoid pointed questions. A most important requirement for the efficiency and educational role of the reports-elections meetings is that they should everywhere take place in an atmosphere of principled and business-like criticism and self-criticism. And it goes without saying that the formal report should be an example of this.

A conspicuous place in the reports should be reserved for an account of what DOSAAF committees have done about the criticisms and recommendations of the organization's members and what they have done about carrying out the decisions of the previous reports-elections meeting. This will have a beneficial influence on the debates and will help develop healthy criticism and raise the activity of DOSAAF members.

Many years of experience show that in order to prepare a report rich in content it is necessary to draw widely into that task not only all committee members, but other aktivists as well. It is often useful to assign to the membership ranks of an organization the task of studying

concrete problems so that corresponding recommendations may later be introduced for the meeting's consideration. Thus, last year in the DOSAAF organization which was headed by Comrade N. Veretennikov, more than 20 aktivists, in addition to committee members, were drawn into the preparation of the report. They included reserve officers, sportsmen, and PVO public instructors. The chairmen of the plant trade-union and Komsomol committees took an active part in the preparation of the report. And this was a great help.

As we know, the report must be confirmed at a session of the DOSAAF committee. In order that this procedure not be transformed into a mere formality, the preparation of the draft of the report must not be delayed. Indeed, how can the content of the report be corrected if it is discussed only a day or two before the meeting? To make the necessary corrections in conformity with the decision of the committee, not less than five or six days are needed, as a rule.

It is completely justifiable to draw the aktiv into the task of working out the draft resolutions of the reports-elections meetings as well. When this is done, the resolutions are usually better formulated, more concrete, and reflect fully the opinion of the society's members. This, in turn, makes it possible immediately after the meeting to set about to the realization of the adopted resolution and helps increase the interest of the DOSAAF members in verifying fulfillment.

In every oblast there are leading defense collectives, some of which have been awarded the Badge of Honor of DOSAAF USSR, the badge "For Active Work." It is desirable for these organizations to hold their meetings first. The experience of the leading organizations will help rayon and city committees to conduct reports and elections more successfully in the backward DOSAAF collectives.

The CPSU Central Committee and Comrade N. S. Khrushchev have frequently pointed out that the core of organizational work, its basic content, is the correct selection and the thoughtful assignment of cadres. Work with cadres should constantly be the center of attention for DOSAAF committees. However, leaders of the Kurgan Oblast and the Mordva Republic DOSAAF organizations, and many city and rayon committees, have forgotten this, have not given due attention to the selection and training of cadres, and have not been sufficiently demanding toward their workers. Without question, all this has had a harmful effect on the results of mass-organizational work in these organizations.

The task is to achieve a significant strengthening of the leadership of primary DOSAAF organizations in the course of reports and elections, and to select the most active comrades capable of exercising creative initiative in their assigned work and of being real organizers of vital, varied mass-defense and sport work.

In our times, when DOSAAF organizations have sizeable cadres of aktivists at their command, it is inexcusable to retain in the leadership people who cannot cope with their assigned tasks. We must also come out decisively against the attempt to assign people as chairmen of primary organizations simply on the basis of their being the ones who are least occupied with their regular job.

In this connection, experience has confirmed the usefulness of the broad representation on committees of energetic aktivists from the ranks of sportsmen, public instructors, reserve officers, representatives of trade-unions and Komsomol organizations. It is due to a staff of this type that the authority of the DOSAAF committee is significantly increased and its influence on all aspects of the life and activity of the organization broadened.

The strengthening of social control is an effective way of raising the level of organizational and mass work and of eliminating shortcomings. Therefore, elections of inspection commissions /revizionnyye komissii/ and of inspectors /revizory/ in primary DOSAAF organizations should be given careful attention. Their active work is of very great importance now.

Elections of leading DOSAAF organs must be carried out with strict regard for the demands of DOSAAF democracy, which allows DOSAAF members to express their will in fact. In the course of the elections representatives of rayon DOSAAF committees must help members of the society to evaluate correctly the professional and political qualifications of comrades who are recommended for the staff of the committee of the primary organization.

Operational leadership by DOSAAF committees is a necessary requirement for the successful performance of reports and elections. Timely instructions to chairmen of primary organizations, members of city and rayon committees and public instructors must be given; the personal participation of the chairmen of higher-ranking committees in the preparation and conduct of meetings in primary organizations must be ensured. At the same time, it is necessary for the committee representative to familiarize himself on the spot and before the meeting with the affairs of the defense collective and to help the aktiv.

DOSAAF committees are required to generalize and to bring to other collectives in an effective manner the lessons and conclusions derived from the experience of holding the first reports-elections meetings. It is also important to generalize everything which is valuable in the content of the meetings and in the daily activity of the primary organizations in order later to familiarize the entire aktiv with

these materials and to use them widely in the preparations for the city, rayon and oblast conferences of the Society.

DOSAAF organizations and committees have every condition necessary for conducting reports and elections on a high ideological and organizational level.

TRIPLE DOSAAF RANKS

Sovetskiy Patriot
/Soviet Patriot/
4 November 1959, Moscow,
Page 3,
Russian, nsp

Unsigned Article

(In February of this year the Kostroma organization of DOSAAF displayed remarkable initiative: it undertook to increase the ranks of its organization several times over. It is well known that the Kostroma people are honorably fulfilling their pledge.

Many other organizations are following the example of the Kostroma people.

Today the Novgorod people are entering the active struggle for a new intensification of mass defense and sport work. As has already been reported in our paper, a meeting of the party-defense aktiv, called by the oblast party committee, took place in Novgorod a few days ago.)

Opening the meeting, the first secretary of the oblast party committee, Comrade V. Prokof'yev, said:

-- Mass-defense and sport work is an integral, inseparable part of party work. The present state of this work cannot satisfy us. The task consists of bringing the Novgorodskaya oblast DOSAAF organization into the ranks of the leading organizations. How can we do this? That's precisely what we must talk seriously about today.

And actually, a long and serious discussion did take place at the meeting of the aktiv. It was a discussion about the future of its defense organization, about what the party, soviet, Komsomol, trade-union, sports, DOSAAF and other public organizations had to do in order to improve radically mass-defense and sport work in the oblast.

In the report of the secretary of the oblast party committee, Comrade Shishonkov, and in the speeches of the participants in the meeting (17 of them took the floor), a detailed analysis was given of the state of affairs in the DOSAAF collectives of the oblast, the shortcomings impeding the forward movement of their work were brought to light, and concrete ways to overcome these shortcomings were set forth.

It was noted at the meeting that many DOSAAF collectives were effectively propagandizing military, technical, aviation and nautical science. In 1959, the oblast organization was training twice as many drivers, motorcyclists, tractor operators and radio specialists as in 1957.

The number of sport competitions had increased. Over the past year and a half, more than 100,000 persons had taken part in them. A glider station was opened this year in the oblast center; motor boat enthusiasts made their appearance on the Volkhov River. Amateur radio operation has been undertaken on a broad scale. The oblast already has 40 individual and collective short and ultra-shortwave radio stations.

The amateur radio enthusiasts of the Borovichi Radio Club displayed a valuable initiative. They took a pledge to create and put into production a number of instruments and electronic devices which would help bring automation into several production operations of the city, improve technology, and eliminate waste.

DOSAAF committees are organizing the training of the population in the PVO program. This work is going along well in the cities of Chudovo and Borovichi. Here the population is being successfully trained in the 22-hour program, and the training of workers and employees in the program of the "Ready for PVO" norms of the first degree is proceeding on a broad scale.

What has made the work of these organizations successful? First of all, the fact that the DOSAAF committees and their leaders are imbued with a feeling of responsibility for the work entrusted to them and have mobilized the aktiv for it. Dozens of public instructors like, for example, Comrades Smirnov (refractory combine), Yefremov and Osipov from the equipment plant, have trained 100 and more people each. The DOSAAF committees reported punctually to the city party committee and the rayon party committee and to the soviet executive committees on the state of affairs, set concrete questions before them, made proposals and received effective aid. The Borovichie City Party Committee frequently discussed the question of the training of the population in PVO at conferences of the secretaries of party organizations and heads of enterprises, and they, in turn, gave the DOSAAF organizations the necessary help.

"In order to call the attention of the party, soviet, trade-union and economic leaders to the problems of mass-defense work," said Comrade V. Shishonkov, "on the decision of the bureau of the oblast party committee meetings of the party-defense aktiv were held this year in all the cities and rayons of the oblast. As the result of sharp and just criticism, many party organizations improved their supervision over DOSAAF collectives.

"However, together with a certain improvement in the work of a number of DOSAAF collectives," the speaker emphasized, "one cannot fail to see the neglect and passivity of many organizations. Inspite of the orders of the bureau of the oblast party committee, which adopted a special decree on 26 February 1959, certain rayon and city party committees and primary party organizations have not yet taken energetic, effective measures to improve mass-defense work, but have confined themselves to discussion, advice, and various proposals and decisions which they rapidly forget. Shortcomings in mass-defense work are being eliminated very slowly.

As we know, an increase in DOSAAF ranks is one of the basic indices of the organizational strength of the society's collectives. The Fourth DOSAAF Congress set forth a responsible task -- to bring into the society a majority of the adult population. This was also the aim of the bureau of the oblast party committee in its decree of 26 February. It was decided to set up primary DOSAAF organizations in all enterprises, construction sites, in kolkhozes, sovkhozes, educational establishments and institutions. And what is the actual state of affairs? Less than half of the adult population is enrolled in the ranks of even such organizations as those of Novgorod, Borovichi and Starorussiya. And, in the oblast as a whole, only 20% of the toilers are in DOSAAF.

In the Molvotitskiy, Polavskiy and Utorgorshskiy rayons the work of the DOSAAF organizations goes on without any direction. In half of the kolkhozes of these rayons, no organizations have been set up and the existing defense collectives are extremely small in size and are idle.

The Poddorskiy rayon DOSAAF organization (Comrade Bykanov, committee chairman) has not only failed to increase in size this year, but, on the contrary, it has decreased in size. The tolerance of the Poddorskiy rayon party committee toward this situation is surprising, participants in the meeting declared. To be sure, the bureau of the rayon party committee discussed the status of mass-defense work in the rayon at its session, and a meeting of the defense aktiv was held. However, control over the fulfillment of the decisions was not organized, and for this reason the situation remained unchanged.

The meeting subjected the Soletskiy Rayon Party Committee and the rayon executive committee to serious criticism for their lack of attention to questions of mass-defense and sport work.

"You have criticized us here, and, of course, justly so," said the secretary of the Soletskiy Rayon Party Committee, Comrade Durynichev, who spoke at the meeting. "We concerned ourselves with DOSAAF work seriously only intermittently. Now we will take a firm hold on this matter. We have had a meeting of the party aktiv and a conference of

the secretaries of the party organizations. We discussed these matters in detail. After this, seven new organizations of the society have already been set up. Paramilitary games have been held in the rayon. We plan to hold rallies of PVO instructors. Among the measures planned by the rayon party committee are meetings of primary party organizations, at which questions of improving mass-defense work will be discussed."

Participants in the meeting noted that many economic, trade-union and Komsomol workers continue to apply themselves poorly to mass-defense work, do not feel their responsibility for this work, and frequently fail to give needed help to DOSAAF organizations in setting up a material base.

Comrade Konyrev, director of the Borovichi Refractory Combine, said:

"Some economic leaders, trying to justify their unconcern for the activity of DOSAAF collectives, say, 'We are so busy with production that we don't have enough hands for mass-defense and sports work.' This explanation doesn't stand up, of course. The experience of workers of our enterprise shows this. We take care of our production plan very well and don't forget about DOSAAF -- we help it in its work. We set aside funds for obtaining training aids and sport equipment, provide a place for study, etc."

The oblast and other DOSAAF committees were criticized at the meeting for not exploiting all possibilities for developing mass-defense and sport work. Instead of developing public initiative, together with the Komsomol, for setting up sport facilities and expanding the study and material base, some of them place all their hopes on help from the outside alone. At the same time, there are committees which rarely present party, soviet and social organizations with proposals directed toward developing and improving mass-defense, sport and study work.

DOSAAF committees are still weak in drawing the public aktiv into mass-defense work and far from using to a sufficient degree the local press, radio, cinema, etc. for propagandizing the aims and tasks of the society and its varied activity. If all these possibilities were used to their fullest extent, the oblast DOSAAF organization would considerably improve its propaganda among the population of military and technical science and could at least double the size of its training program for specialists and sportsmen in the various achievement ranks.

Lieutenant-General S. Shatilov, first deputy chairman of the DOSAAF Central Committee, who addressed the meeting, spoke of the great patriotic activity of the defense society, of those tasks which the party sets before it today.

Also taking part in the discussion of the report were comrades Atamanov (chairman, oblast DOSAAF committee), Demchenko (secretary of the party organization attached to the Malovisherskiy Rayon DOSAAF Committee), Anisimov (oblast military commissar), Perevozchikov (chairman, oblast council of the Union of Sport Societies and Organizations), Levinson (chairman, oblast committee of the Red Cross Society), et al.

A letter from S. M. Budennyy, Marshal of the Soviet Union, was read at the meeting. The letter said: "The people of Novgorod, enthusiastically building communism and fulfilling national economic and cultural tasks, will without doubt achieve great success in mass-defense work as well. I wish, dear comrades, that you achieve this success as soon as possible and that you earn the right to be honored with the highest award of the society -- the Badge of Honor, DOSAAF USSR."

THE MEETING RESOLVED:

-- To consider the strengthening of the collectives of mass patriotic organizations and the radical improvement of the content and quality of mass-defense work an important task of all party, soviet and Komsomol organizations and of DOSAAF committees and the Red Cross Society;

-- To bring at least 60% of the entire adult population into DOSAAF ranks by May 1960 and to establish primary DOSAAF organizations everywhere;

-- To increase twofold, in comparison with 1958, the training of technical cadres;

-- To set up DOSAAF photo displays, exhibits, and corners in enterprises, kolkhozes, institutions and educational establishments;

-- To establish target ranges, water sports basins, ski bases and other sport facilities in every city and rayon center;

-- To set up collective radio stations with a training class for radio specialists in every city and rayon center as well as in industrial enterprises.

In the autumn-winter period of 1959-60:

-- To organize composite oblast teams for all technical types of sport;

-- To have in large primary organizations teams for marksmanship, motorcycle, motor vehicle, amateur radio, and nautical contests, for motorboat and underwater sport, and also teams of model builders. To set up in the remaining primary organizations consolidated sports teams. To organize in every city and rayon composite teams for these types of sports.

-- To complete the training of the population in the norms of the "Ready for PVO" course of the first degree.

The resolution contains concrete recommendations to party, soviet, Komsomol, trade-union, economic and other organizations on their participation in mass-defense and sport work. The conclusion of the decree states:

-- Taking upon itself the present obligations, the meeting of the party-defense aktiv expresses its resolve to lead the Novgorod Oblast DOSAAF organization into the ranks of the leading organizations of the country in the immediate future.

MAIN SOURCE OF STRENGTH OF THE SOVIET ARMED FORCES ON SECOND ANNIVERSARY OF OCTOBER 1957 PLENUM OF CC CPSU

Col. P. Shigorev

Sovetskiy Patriot
/Soviet Patriot/,
28 October 1959, Moscow,
Page 3,
Russian, nsp

....The October Plenum unmasked and decisively condemned the activities of the former Minister of Defense, G. K. Zhukov, who grossly violated Leninist party principles on the direction of the Armed Forces, and who carried out a dangerous and harmful policy of curtailing the work of party organizations, political organs, and military councils, aimed at liquidation of direction and control over the army and navy on the part of the Party, its Central Committee, and the Soviet Government....

The decrees of the October Plenum of the Central Committee, CPSU, which set new and important tasks before our defense society organizations, have had a profound influence over its entire and diverse activities. The Fourth Dosaaf Congress, in its decisions, pointed out to all of the society's committees the need to step up their educational work and the propaganda of military knowledge among members of the society, in conformity with the tasks arising out of the decrees of the October Plenum of the Central Committee. The struggle for putting these tasks into practice has ideologically enriched and reactivated the entire patriotic activity of the society, has brought about an improvement in the work of educating Dosaaf members in the spirit of a profound understanding of their duty to the motherland, and in the spirit of the heroic traditions of the Soviet Armed Forces.

Under the leadership of party organs and in close cooperation with the Komsomol and other public organizations, members of Dosaaf are coming forth as the initiators and active organizers of various mass measures directed at further strengthening the amicable ties between workers and the men of the army, air force, and navy.

The two years which have elapsed have seen the birth and continued development of the noble tradition of sponsorship of army units and naval vessels by the members of enterprises, kolkhozes, and educational institutions.

The experience of Dosaaf organizations in Irkutskaya Oblast have been instructive in this respect. The workers of plants, construction organizations, and kolkhozes in that oblast are continuing to strengthen their firm friendship with the personnel of one of the units (soyedineniye) of the Pacific Fleet. Representatives of oblast workers often visit seamen, tell them of their victories on the labor front, and inspire

them onto the achievement of new successes in their military and political training. Upon their transfer into the reserves, many of the men of the Pacific Fleet are setting off to work on the new construction projects of Irkutskaya Oblast.

Worthy of attention are the activities of Dosaaf and other public organizations of Leningrad in strengthening their ties with servicemen. A fine tradition has been established there: enterprises sponsoring military units and ships of the navy, are conferring upon them transferrable Red Banners for their attainments in military and political training. The military units, in turn, mark the achievements of leading industrial collectives of the city by conferring their own Red Banners upon them. Military units and enterprises of that city are exchanging amateur theatrical groups, and are conducting joint excursions and sports competitions.

The Kirov City Dosaaf organization has amassed a great deal of experience in the expansion of workers' ties with the personnel of military units and naval vessels. On holidays, meetings between workers and outstanding members of the army and navy and with representatives of the local garrison are organized in city and Dosaaf clubs. On those days, delegations of workers are sent to military units (podrazdeleniya). Members of Dosaaf and the Komsomol regularly send warm, inspiring letters to their comrades in the ranks of the army and navy.

There must also be told the fine work being done in the inculcation among workers of a love for their army, air force, and navy, being carried on by Dosaaf and Komsomol members of the Kolkhoz imeni pilot-Hero of the Soviet Union Arseniy Morozov. This kolkhoz is located in Turginovskiy Rayon of Kalininskaya Oblast. Highly respecting the memory of their fellow villager, the people of Turginovskiy Rayon invited to their kolkhoz the men of the unit in which Arseniy Morozov served, as well as representatives of the Kalinin Air Club, where Morozov received his specialty as a pilot prior to the war. A meeting was held at which workers of the rayon party and Komsomol committees, representatives of the military units and the Dosaaf Committee spoke. At the meeting, gifts were presented to Anna Vasil'yevna Morozova, mother of the hero. This day will long remain in the memories of the kolkhozniks.

Dosaaf committees, together with other public organizations, are also practicing such measures as giving parties for youth, devoted to defense topics, and sponsoring various sports competitions, in which representatives of workers, rural youth, and military units and naval vessels participate. They also arrange for the appearance of the society's best sportsmen before military units, invite Heroes of the Soviet Union and war veterans to talk to youth, are the organizers of ceremonies marking the departure of draftees for service in the Armed

Forces and of servicemen being discharged, etc. All this is promoting the noble cause of strengthening the indissoluble ties between the army and the people, and the education of our people in the spirit of ardent Soviet patriotism.

The decrees of the October Plenum of the Central Committee, CPSU, are some of the most important documents expressing the party's policy in the field of military construction, and spell out the tasks of commanders, political organs and party organizations of the Soviet Army and Navy for a long period to come. The further struggle for putting the Plenum's instructions into practice will provide us with the opportunity to raise even further the level of the combat and political training of our servicemen, and the might and military preparedness of the Soviet Armed Forces.

Organizations of the patriotic defense society of the Soviet Union, in fulfilling the tasks arising out of the decisions of the October Plenum of the Central Committee, CPSU, are being called upon to expand even further their propaganda and agitation work aimed at educating our Soviet people in the spirit of indissoluble friendship with the men of the army and navy, in the spirit of infinite respect for their Armed Forces, which are vigilantly guarding the peaceful creative labor of our nation.

TO INSTRUCT IS TO EDUCATE

Sovetskiy Patriot
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11 October 1959, Moscow,
Page 3,
Russian, nsp

A. Zotov,
Deputy Chief for Political Affairs, Administration for Aviation Training and Sports, Central Committee of DOSAAF USSR

The training of future airmen is a painstaking, difficult and responsible task. It demands of workers in airclubs a well-considered organization of training and educational work. In order for the youth to master flight practices successfully, teachers, instructors and commanders of squads /zvena/ and detachments /otryady/ must not only be skillful methodologists, but must continually concern themselves with the ideological tempering of future aviators, helicopter pilots, glider pilots and parachutists -- with instilling in them the highest moral qualities.

This question is of especially great importance now, in the period of the all-out building of communism, when questions of the development of a communist morality among the Soviet people are a vital task of the day.

The question of the communist education of the toilers has always been and remains an object of special concern for our party and government. As we know, concerted and well-developed tasks in the field of training cadres under present-day conditions have been defined in the decisions of the XXI Party Congress and also in the Law on strengthening the ties of the schools with life and on the further development of the system of public education in the USSR. These documents constitute the program of activity for the educational organizations of DOSAAF too, especially for the airclubs, air-sport clubs and glider stations.

After the XXI Party Congress, educational work among the personnel of the aviation educational organizations of Dosaaf was preceptibly stimulated. At the same time as they are perfecting the educational process, commanders, political workers and instructors of many airclubs have begun working more concretely and purposefully with future aviators, skillfully directing their efforts toward the attainment of excellent grades in their courses of study and imbuing the youth daily and persistently with high moral qualities.

Thanks to the well-organized political educational work, the Krasnoyarsk airclub, for example, has been training aviation cadres for nine years without any plane accidents. Its staff of instructors and teachers skillfully combines the flight training and the political education of the students and sportsmen, which fact helps the development

of high moral qualities in them. In this club acts of amoral behavior among the personnel have been completely eliminated.

The Ufa airclub is devoting much attention to political educational work with its personnel. The workers of this club systematically explain to the students and sportsmen the vital events in the domestic life of the country and the international position of the Soviet Union, propagandize widely the historic decisions of the XXI Party Congress and the tasks which follow from these decisions for Dosaaf's educational institutions. Detachment commanders M. Kuznetsov, N. Dvinin and other leading workers of the airclub often deliver reports and talks to the personnel. All this has a positive effect on the flight training of students and sportsmen.

Political-educational work is being skillfully conducted in the Central Joint Air-Technical and the Central Glider-Helicopter schools, where the efforts of the commanders, of the party, trade-union and Komsomol organizations are directed towards training fliers in the spirit of high responsibility for the quality of their studies, for enhancing their ideological tempering.

Unfortunately, this is not the situation everywhere. We have aviation educational organizations which permit the existence of a breach between the training and the education of future airmen.

Several detachment and squad commanders and several instructors imagine that their responsibility is to give youth instruction in flying, to teach them to pilot an airplane, a helicopter, a glider, and to instruct them how to parachute skillfully. However, as for educating the future airmen, well, this is the business of political workers, of the party, trade-union and Komsomol organizations.

Of course, the social organizations are a tremendous force in the effort of training personnel. But, questions of educational work should be viewed more broadly. It is necessary, above all, to raise the role of training, of the lesson as a basic form of the training and education of students and sportsmen. This means that each teacher and pilot-instructor, while conducting the studies, should not only instill solid aviation techniques in the students, but also educate the students in the spirit of absolute fulfillment of their service responsibilities, develop in them high moral qualities, train active builders of communist society from among the ranks of the youth. For, it is well known that even if he has the best specialized training, a student will not become a fully qualified airman if he does not have the high moral qualities necessary for a Soviet aviator.

Of great importance is the training of future aviators in a creative approach to the solution of the tasks set before them. In

classroom exercises and during instruction on the ground and in the air, it is necessary that club workers take every opportunity to develop among the students and sportsmen initiative, boldness and skill in overcoming any of the difficulties of flight service.

In order to educate their students in these qualities the instructors themselves must be examples of high discipline and moral purity. At the same time, it is possible to see a different situation in actual practice. There is the case, for example, of the detachment commander of the Chelyabinsk airclub, N. Denisov, who does not set an example for those under his command, but who himself is guilty of amoral behavior. It is not fortuitous, therefore, that in his detachment discipline is not what it should be.

Of great importance in educational work is an individual approach to those being trained, a continuous, vital and easy sociability between the officers, instructors and teachers, on the one hand, and the students, on the other. At the same time, some airclub leaders, detachment and squad leaders and instructors to this day rarely converse cordially with students and sportsmen and do not manifest due concern for educating them in responsibility for assigned tasks.

Thus, for example, the squad commander of the Ryazan' airclub, M. Sazonov, and flight instructor V. Filatov stand aside from educational work, associate infrequently with people under their command, do not know their moods and needs. It is therefore not surprising that several students violate flight discipline and conduct themselves unworthily as airmen.

Educational work among students and sportsmen can be considered effective only when it is designed in all its aspects to serve the interests of the struggle for the precise fulfillment of instructions and training regulations, for the strict observance of rigorous order and discipline on the ground and in the air.

It is the duty of commanders and instructors to raise in every way the demands on themselves and on their subordinates and not to pass over a single violation of the flight rules by students and sportsmen. However, not in all instances are these demands being correctly met. There are cases where certain airclub workers, instead of becoming more demanding, are actually permitting a weakening in instruction and in the organization of internal routine. Nor have instances of crude treatment by officers of their subordinates been eliminated. Such things have taken place, for instance, in the Omsk airclub (Comrade Mel'nikov, chief).

In raising the level of educational work, great and responsible tasks confront party, trade-union and Komsomol organizations. It is

their duty to investigate all aspects of the training and education of the personnel, to develop more broadly competition for excellent crews, flights and squadrons, to educate students in high moral qualities.

It is also necessary that deputy chiefs for political affairs of the airclubs, who are the direct organizers of political-educational work, step up their activity. With the aid of the party, trade-union and Komsomol aktiv they should persistently direct the efforts of the personnel toward the attainment of high grades in their training studies and toward strengthening discipline. They should systematically generalize the successes of leading airmen in carrying out flight assignments and observing aviation procedures, and should propagate all leading experience.

It is also necessary to remember that the training and the education of the students are inseparable one from the other -- it is a single process. Therefore, while struggling to raise the quality of training to its highest level, airclub workers and party, trade-union and Komsomol organizations should use all forms and means of educational work, should strive to conduct it on a high ideological level so that it might mobilize students and sportsmen for the successful solution of the tasks confronting them.

WILL THERE BE A RUNNING START?

Sovetskiy Patriot
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Page 2
Russian, nsp

N. Ryabov
Kishinev Correspondent

Recently, several defense collectives of Moldavia have paid increased attention to training the population in the "Ready for PVO" course of the first degree. This has been reflected in the improved quality of training in the PVO circles. Competitions in the new course are being held with greater frequency.

These competitions have taken place in Kishinev, for example. Eight teams from industrial enterprises have taken part in them. DOSAAF members competed in putting on gas masks, in shooting with gas masks on, in extinguishing fires, and in use of protective clothing. The best performance was turned in by the DOSAAF team of the housing-operations section, led by reserve officer Comrade Sokolov. The teams of the combine of industrial enterprises and of Knitted Wear Factory No 1 also performed effectively.

The city DOSAAF committee intends to conduct mass competitions in PVO. Many defense collectives in enterprises, schools and institutions will take part in them.

Agit-prop work in the republic has intensified somewhat. Leading members of the republic organization have started participating in it. For example, the deputy chairman of the republic DOSAAF committee, Comrade Zubov, recently spoke over the local radio on the theme, "The Vital Task of our Society." This was the first in a series of talks on ways of defending the population against weapons of mass destruction. Various forms and methods of propaganda are being exploited by the DOSAAF committees of the Benderskiy, Faleshtskiy, Sorokskiy and several other rayons, and they are yielding visible results. Already more than half of the workers, employees and kolkhoz members in these rayons have been trained for achieving the norms of the "Ready for PVO" course of the first degree. The best public instructors are skillfully helping the population obtain practical experience in the way to behave in the event of an air attack and are conducting systematic training in the various exercises of the new PVO program.

Unfortunately, the situation is quite different in Oloneshtskiy Rayon. There, training the population in the "Ready for PVO" course of the first degree has not yet been undertaken. Training in the 22-hour program was carried out hirriedly in kolkhozes imeni Kotovskiy and imeni 20th Congress of the CPSU, and in the "Road to Communism" kolkhoz.

And it is not accidental that many DOSAAF members have no understanding of individual defense measures.

The rayon DOSAAF committee is forgetting the need for energetic organizational work. Comrade Rodionov, chairman of the rayon committee, does not turn for help and advice to soviet and party organs, exercises feeble control over the activity of the public instructors and doesn't concern himself with creating the necessary training base. All this has led to the breakdown of the planned schedules for instructing workers, employees and kolkhoz members in the "Ready for PVO" course of the first degree. In many circles and groups training has been postponed indefinitely, although a majority of the public instructors have long ago completed their retraining courses.

The rayon DOSAAF committee worked out a plan which provided for seminars and conferences of public instructors, aid to committees of the society's primary organizations, reports and lectures, training film demonstrations and many other measures. But, as the saying goes, it looked fine on paper -- it was beautifully written up, but when it came to executing these measures, many provisions in the plan came to nought.

The PVO section under the rayon DOSAAF committee is indifferent to its public responsibilities, to the needs and demands of the primary organizations. It fails to conduct extensive explanatory work among the population. Planned lectures and reports on various topics as an aid to those who are studying the material of the PVO program are delivered only sporadically. It has been a long time since qualified presentations have been given in kolkhoz DOSAAF organizations on anti-atomic and anti-chemical defense measures.

The rayon committee pays scant attention to the activity of public instructors. No seminars or conferences are held with them; the best experience is not given general application. However, there was an attempt to call a conference of public instructors in rural defense collectives in order to determine what difficulties are encountered in their areas of work and what help is needed. It was a good idea. But what came of it? Only a few individuals turned out for the conference. This was the result of the fact that the rayon DOSAAF committee has lost many of its instructors, does not have contact with them. In the summer months everything is blamed on the preoccupation with field work. But even in the autumn the situation is pretty much the same. Leadership in instructing the population in PVO measures is far from meeting the requirements set forth.

Unfortunately, this is the picture not only in Oloneshtskiy Rayon. It is the same in several other rural rayons. Meanwhile, the republic committee does not go beyond pinpointing shortcomings. It has taken only the first steps in improving the training of the population in anti-air defense.

But when will a running start be taken?

PLUS AND MINUS

Sovetskiy Patriot
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Page 2,
Russian, nsp

Ya. Yermolayev,
Chairman Khabarovskiy
Kray DOSAAF Committee

The Fourth Dosaaf Congress required the committees of the society to take every measure to develop technical types of sports on a mass scale. This decision of the congress has been taken by our kray organization as a fighting task. In less than two years the kray organization and its sport clubs have increased the number of sportsmen for the aviation and motorcycle types of sports by two and even more times. The number of nautical sportmen has grown by one and a half times, while the ranks of amateur radio enthusiasts have trebled. At present, we have around 1,800 Dosaaf sport teams.

Competitions held by the primary organizations and by the rayon and city committees contributed to the revival of sport life in the kray. This year alone, more than 37,000 Dosaaf members took part in competitions. More than 2,000 young men and women have achieved rank status.

Before last year there were no masters of sports in the kray. Now, there are 15 masters of sports among the motorcyclists, amateur radio enthusiasts, parachutists, and marksmen.

This year the kray's sportsmen proved themselves serious competitors of sportsmen of other oblasts in zonal, republic and all-union competitions. Thus, the Khabarovsk team captured first place in the Far East zone in the nautical sport contests, and sixth place in the all-union contests, surpassing strong teams from the Baltic republics. The kray's motor sportsmen, participating in the republic competitions of the Spartakiada of the peoples of the RSFSR, took second place among the teams of the Russian Federation. And "small-aviation" builders won out over the model plane builders from the Far East and Trans-Baykal zone.

A great event in the life of the kray's sportsmen were the international comradely competitions in cross-country motorcycle racing, which took place in Khabarovsk this summer. The best motorcycle racers from the Mongolian People's Republic, the Irkutsk, Chita and Magadan oblasts, the Buryat ASSR, and the Primorskiy and Khabarovskiy krays took part in them. That was the first time such major competitions took place in our city. They attracted the attention not only of sportsmen, but of a large number of spectators as well. Khabarovsk motorcyclists captured 12 of the 16 prize places.

The period after the Fourth Dosaaf Congress was one of radical change in the development of sport work in the kray organization. However, there are serious gaps as well in this work.

One of the basic shortcomings in our work is the inadequate enlistment of the youth into sports, especially the rural youth. In such large rayons as the Bikinskiy, Vyazenskiy, imeni Lazo and Verkhne-Bureinskiy, there are no motorcycle teams which could participate in kray competitions. Up to now, we have not devoted sufficient attention to the development of motor sports in such northern cities as Nikolayevsk-on-Amur and Sovetskaya Gavan'.

The Dosaaf committees of these rayons and cities are themselves primarily responsible for this situation. Some chairmen refer to the lack of sport machines -- but this is irrelevant. There are primary organizations in the kray which conduct competitions with motorcycles which are privately owned by Dosaaf members. A good example was set by sportsmen of the Zheleznodorozhnyy Rayon of Khabarovsk City, who completed several long trips through the Primor'ye and Priamur'ye. Several sportsmen of this rayon participated on their own machines in the international competitions.

The kray Dosaaf committee sets itself the task of developing motor sports on a mass basis during 1960-61 in the rayons and northern cities, of setting up permanent sport teams in them which will be capable of participating in the big competitions.

Of great importance is widespread propaganda of technical types of sport -- live, visual propaganda. The task is to make all competitions popular, public, and to enlist the broad masses of the youth as spectators.

The degree to which this kind of propaganda is effective can be demonstrated by the following example. Thousands of young men and women attended the kray and intra-club competitions of parachutists, and they were thrilled as they watched the sportsmen jump. And many of them, right there at the airdrome, asked the instructors for information -- how could they be parachutists, where can they enlist in a parachute circle? As a result, we more than doubled our number of sportsmen-parachutists this year.

We have not yet learned how to organize in a real sense the training of cadres of public instructors and judges. The sport clubs have a merely formal approach to this important matter. The aviation sport club, for example, trains instructors-airplane model builders only in nearby schools and enterprises and pays no attention to other rayons and cities.

Of course, the kray DOSAAF committee is guilty here, too; for, in a number of cases, its plans for the training of cadres of public instructors by the clubs were insufficiently thought out, without consideration for the needs of the rayon and city DOSAAF committees. The clubs should become a real workshop for the training of broad masses of sportsmen and public instructors.

However, there have not yet been resolved several important considerations which could perceptibly enhance their role. Some of the clubs have no one to take care of sport work.

At the same time, this question can be solved without spending additional funds. In the interests of an extensive development of technical types of sports, it is necessary to undertake the fullest reduction of the apparatuses of the oblast and kray DOSAAF committees, in order that the clubs may maintain the requisite number of instructors and trainers. The instructors and trainers can be supported out of the funds received by the committees from membership dues, cost-accounting courses, etc. The Khabarovskiy kray DOSAAF committee is able to strengthen its clubs with two or three workers, but this must be legalized through juridical procedure.

In regard to the further development of technical types of sport in the Far East, I would like to express some other desires. The Soviet Far East is growing in every way with each passing year. Such cities as Khabarovsk, Vladivostok, Blagoveshchensk, Komsomol'sk, Sovetskaya Gavan' and others are not behind many cities in the European part of our country in size of population and number of industrial enterprises.

In this connection, the administration for technical training and sports of the DOSAAF Central Committee should establish a permanent zone of the Trans-Baykal and the Far East (beginning with Irkutsk) for holding competitions in all technical types of sport. For example, it is convenient to hold competitions in nautical sport contests in Vladivostok; cross-country motor racing, parachute and model airplane sport in Khabarovsk; motorcycle hippodrome racing, in Blagoveshchensk; marksmanship, in Chita; etc.

This is necessary because the Trans-Baykal and Far East DOSAAF committees are not always able to send sport teams out to republic competitions, which are usually held in the center or in the western oblasts of the country.

And here is another problem. This year the DOSAAF Central Committee organized international comradely competitions in cross-country motorcycle races in the Far East. They were successfully

carried out. Such international encounters of sportsmen from the Soviet Far East and the People's Republic of China, the Korean People Democratic Republic, the Mongolian People's Republic and Vietnam should be carried out for other types of sport as well. At the same time, it would be desirable to include more sportsmen from the Far East when Soviet sport teams are sent to these countries. This would promote a considerable upsurge in sports in the Far East, as well as expand friendly sport ties with neighboring socialist countries.

THE AWARD CALLS FORWARD

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Page 3,
Russian, nsp

P. Bad'in
Kaluga

The DOSAAF Central Glider and Helicopter School is, by right, considered to be the forge of air sports cadres. In the 25 years of its existence there have been trained here many glider and helicopter instructors and renowned masters of flying. Graduates of the school are doing a great deal of work in teaching our youth the art of flight in gliders, airplanes, and helicopters.

For achievements attained in the training of air cadres, the Presidium of the Central Committee of DOSAAF has awarded the DOSAAF USSR Badge of Honor to the school. The conferring of this award took place recently.

The article below tells of the outstanding people of the Central Glider and Helicopter School, and of their achievements.

"Who is up there?," the student asked, approaching a group looking up at a glider in flight.

"Sakina Asadova!" they told him.

"You don't say!," he said, as he stood there and watched the flight with interest.

As Asadova settled down in her seat in the glider, the tow plane, having completed its take-off run, smoothly picked up the motorless craft. The glider took off, almost touching the green waves of grass, and shot off from the earth. At a height of 500 meters the girl released her glider from the plane and began an ascending spiral. Then, Asadova succeeded in "finding" an ascending current. Right there in the area of the airfield she was able to attain a height of 1,500 meters. The clouds looming here and there in the blue sky seemed to be indicating to the glider pilot where she should fly in order not to leave the ascending air currents.

At first, everything went marvellously. Asadova was so taken by the soaring that she did not notice she was now above a patch of woods. The glider started down with a rush. Her height dropped suddenly to 500 meters. "What to do? Will I have to land without carrying out my training exercise?," the girl thought, and then decided to fly on further. The last leg of the flight was in the "heat waves" over a plowed strip and fields, and all the while she sensed that she was going lower.

Far ahead hung a mighty cumulus cloud. The glider pilot at once realized what she would have to do. "Reach it no matter what happens," Asadova decided. Continuing her struggle against the elements, she skilfully guided the glider. Finally, after having picked up the necessary speed, she succeeded in reaching that "cumulus." Her height immediately increased to 2,000 meters.

She glanced at her watch and was surprised: Oho, already two hours in the air! Making a final turn, she landed, her training exercise carried out.

"Good girl, Asadova, you get an 'excellent' for your flight," instructor Vitaliy Ignat'yevich Salonskiy told his pupil.

Two years ago, Sakina Asadova, a young worker at the Baku Sewn Goods Factory Imeni Volodarskiy, having completed her work with the glider study group at the republic air sports club, entered the Kaluga Central Glider and Helicopter School. It was very difficult for her at first. She lacked knowledge and experience in flying a glider. In addition, her knowledge of Russian wasn't too good. But her daily, intensive study, her love for flying aided her in overcoming those difficulties. She produced grades of good and excellent at the state examinations which followed. And so Asadova became one of the first Azerbaydzhani women to become a glider pilot instructor.

There are many such people like Asadova at the school who have successfully mastered the art of flying gliders and helicopters. Over one-half of the students are outstanding in their studies.

"From the very beginning of training we seek to inculcate into our students a high degree of organization and discipline, will power, and a feeling of collectivism and mutual support -- qualities necessary to future glider and helicopter pilot," said S. Zheleznov, the school's deputy chief for political affairs.

The school has already operated for several years without an accident. A solid, efficient collective has been created here. Engaged in training the students are such experienced teachers,

instructors, and technicians as A. Kutergin, I. Mayorov, S. Klinnikov, S. Golubev, and others. Many of them are veterans of the Great Patriotic War.

Party member Aleksey Ivanovich Kutergin, commander of a glider link (zveno), devotes particularly great attention to the training of students. The strong-willed commander is exacting both of himself and of his subordinates. He sees to it that the instructors and students of the link persistantly keep after the improvement of their knowledge and that they train themselves constantly. Kutergin knows well the virtues and shortcomings of every student and his capabilities. That is why, at the proper moment, he always gives correct advice.

Komsomol member Stanislav Golubev, commander of a helicopter link (zueno), enjoys popularity and respect among the students. A graduate of the school, Golubev, over a short period of time, has moved his link forward into the excellent lists.

The names of other able instructors who have pointed out the pathway into aviation for many young men and women, masters of sports Boris Starostin, Yevgeniya Semenova, and Aleksander Teplykh, are well known in our country. To them belong four all-union records in glider sports. The young, capable first-class pilot Irma Liders, a graduate of the school, won a silver medal at last year's All-Union Glider Competitions.

Together with its struggle for high indices in study and discipline, the school pays serious attention to sports work. The pride of the school is the multitude of prizes, diplomas, and cups won by its sportsmen in various competitions. Kept under glass is a prize given by the magazine Kryl'ya Rodiny (Wings of the Motherland), won by its glider pilots at the First All-Union Competitions in 1958.

The staff of the school does a great deal in the training of sportsmen -- glider pilots, parachutists, aircraft model builders, in the cities and rayons of the oblast. Suffice it to say that in this year alone over 1,500 persons have received training in various aspects of air sports. An exceptionally great work with youth was done by DOSAAF instructors V. Belov, I. Kazykin, V. Tsurukin, R. Yevstigneyev, S. Saykov, and others. Over a number of years the school's aircraft modeling section has done a lot of fruitful work; the section is headed by experienced model builder Oleg Vychevskiy.

The Central Glider and Helicopter School is one of the leading centers for the training of glider and helicopter pilots. In the quarter century of its existance, hundreds of young Soviet people have received profound theoretical knowledge and good practical skills here.

The staff of the school deserves to be proud of its reknowned graduates. Among them are the well-known aircraft designer O. Antonov, Hero of the Soviet Union S. Anokhin, Honored Masters of Sports V. Il'chenko and M. Ratsenskaya, and Master of Sports A. Samosadova, all of whom have made important contributions to the development of gliding, and who have made our Soviet motherland reknown for her world records. An enthusiast of glider training, V. Stepanchenok, back in 1931 was the first in the history of glider sports to do the Nesterov loop, the spin, wingovers, and other maneuvers. Since then the school's students have begun the study of complex glider flight maneuvers.

The great hall of the Palace of the Pioneers is filled with pilots, technicians, and students of the school, and by the city's air sportsmen. Air Force Maj. Gen. I. V. Belov, Deputy Chairman of the Central Committee, DOSAAF USSR, confers the highest award of the defense society -- the Badge of Honor of DOSAAF USSR -- upon the staff of the school.

In accepting the award, the commandant of the school G. Bulyatkin stated:

"Today marks two glorious events in the life of the school: the conferring upon the staff of the school of the highest award of the defense society coincides with the latest graduation of a new detachment of glider and helicopter pilot instructors. This high award binds us to many things. We shall strive to work even better and ever more fruitfully."

SECTIONS ARE OUR SUPPORT

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Page 2,
Russian, nsp

I. Miyusov,
Chairman, Kislovodsk City
DOSAAF Committee

At one of the meetings of the city DOSAAF committee we discussed the work of the sections. It was ascertained that many of them restrict their activity solely to control over the work of primary organizations and are not creative collectives.

For example, the marksmanship section, set up in 1956, has confined itself merely to recording sport results. It is, therefore, no accident that there are few marksmen on the various achievement levels in the city, that the tasks for training sportsmen have consistently been unfulfilled and that there have been few competitions. The situation is no better in the radio section, either.

The city DOSAAF committee decided to radically reorganize the work of the sections, to make them militant organs, and to strengthen them with active, experienced people. A great deal of aid was rendered the committee in this regard by the party organization, headed by reserve officer S. Shestakov.

On the recommendation of the party organization, the presidium of the city DOSAAF committee approved as section heads comrades Yakovlev, Khomenko, Goncharov and Oleynik -- experienced workers and communists. Presidium members N. Bazenkov, S. Stakhov, and V. Artemov were entrusted with the task of giving practical help in preparing for and conducting organizational meetings of the sections. Aktivists from the ranks of reserve officers, public instructors, members of committees and sportsmen became members of the sections.

We have now set up eight sections -- sections for mass-organizational work, propagation of military science, anti-air defense, marksmanship and airplane modeling; and the technical section, the nautical section and the canine corps section.

The leading section is that for mass-organizational work, headed by presidium member N. Yakovlev. At first, this section had few members and was occupied mostly with verifying the work of the primary DOSAAF organizations.

They began searching for new forms and methods of work. The section began the practice of holding group seminars with chairmen of primary organizations on the most important and current problems of their activity. After the seminars, section members are sent to lagging collectives in order to give them on-the-spot help in eliminating their shortcomings.

For example, the primary DOSAAF organization of the office of communications lagged behind in mass-defense work for a long time. Section member Comrade Gorodetskiy was sent there. He called an enlarged meeting of the committee. The question of the work of the primary DOSAAF organization was discussed at party and Komsomol meetings and at a session of the trade-union organization. Now, 92% of the workers and employees in this organization are part of the defense society. PVO training is well organized, marksmanship circles are in operation, and radio techniques are being studied.

The mass-organizational section works in close contact with the propaganda section. Together they organize meetings in the defense collectives with participants in the Civil and Great Patriotic wars.

At first, the propaganda section had weak connections with the primary organizations. Reports which members of the section delivered sometimes had only an indirect relation to the propagation of military science. After the section was reorganized, its work methods changed. Now, section members themselves work out the subjects of the lectures and reports and visit primary organizations more often.

Section members not only deliver lectures, but also render practical aid to organizations in setting up groups to make reports and hold talks.

Our sections are playing a great role in animating mass-sport work. Here, the fruitful activity of the marksmanship section must be noted. For the most part, coaches, ranking marksmen and public instructors are members of this section. An 11-man bureau was selected. The work plan of the section is discussed in the bureau or at a meeting and later confirmed by the chairman of the city DOSAAF committee. The bureau of the section holds monthly sessions; section meetings are held quarterly.

The main condition for the successful work of the section is the high level of activity of each of its members. Almost all section members render detailed help to primary organizations, lead marksmanship circles, organize competitions. Since the beginning of the year, the marksmanship section has held 26 competitions, at which 92 persons fulfilled the norm for marksman of the third rank, while nine met the

norm for marksman of the second rank. More than 500 passed the norms for the GTO badge. Preparations are underway for the training of public instructors and judges.

Three composite teams have been set up under the marksmanship section. Systematic training lessons are given at the city target range under the leadership of members of the section. This year many marksmen have raised their sport scores.

In order to give more concrete help to sportsmen, the bureau of the section has organized two groups -- the judges' group and the qualifications group. The judges' group organizes and conducts training programs for judges of marksmanship, provides judges for competitions, discusses the quality of the work of judges, conducts seminars for the retraining of judges, and concerns itself with increasing the skill of the judges. The qualifications group draws up the documents for awarding the various rank titles and the title of master of sports, and it draws up reference data on records and achievements.

There are still many difficulties in the work of the marksmanship section. The principal difficulty is the lack of an experienced, qualified coach.

It would be desirable for the kray DOSAAF committee to generalize the experience of the work of the best city and rayon marksmanship sections and to disseminate material to rayon and city committees. In our opinion, it would be useful if the kray DOSAAF committee were to hold gatherings or seminars for representatives of marksmanship sections and for target-range instructors.

Members of the PVO section are working hard and successfully. This section keeps close contact with primary organizations. Thirty-two of its members have been sent to primary organizations to render practical help in instructing the toilers in PVO rules. Most of the defense collectives have completed training the population in the 14-hour program, have seen to it that the "Ready for PVO" norms have been met, and have held competitions.

The section frequently holds seminars and calls gatherings of PVO instructors, and it takes care that films on PVO are shown to those undergoing training. These films are shown not only in halls, but also in open sites, in parks and gardens. Much attention is devoted to instruction of housewives.

The section members have set themselves a task -- to ensure that by the end of the year the entire adult population will have passed the "Ready for PVO" norms of the first degree.

Thanks to the active work of the sections and the help given us by the city party committee and the city executive committee, the city DOSAAF organization of Kislovodsk has seen to it that 62% of the adult population is enlisted in the defense Society. Primary DOSAAF organizations have been set up everywhere in our city. The city DOSAAF committee has a 50-meter firing range, built by the efforts of the public. A parachute tower is being erected, two pneumatic rifle ranges have been built, and a motor vehicle club has been set up. Many primary organizations have their own firing range.

However, we are not complacent about our achievements. The Kislovodsk DOSAAF organization is fully determined to continue daily to improve mass-defense and sport work.

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